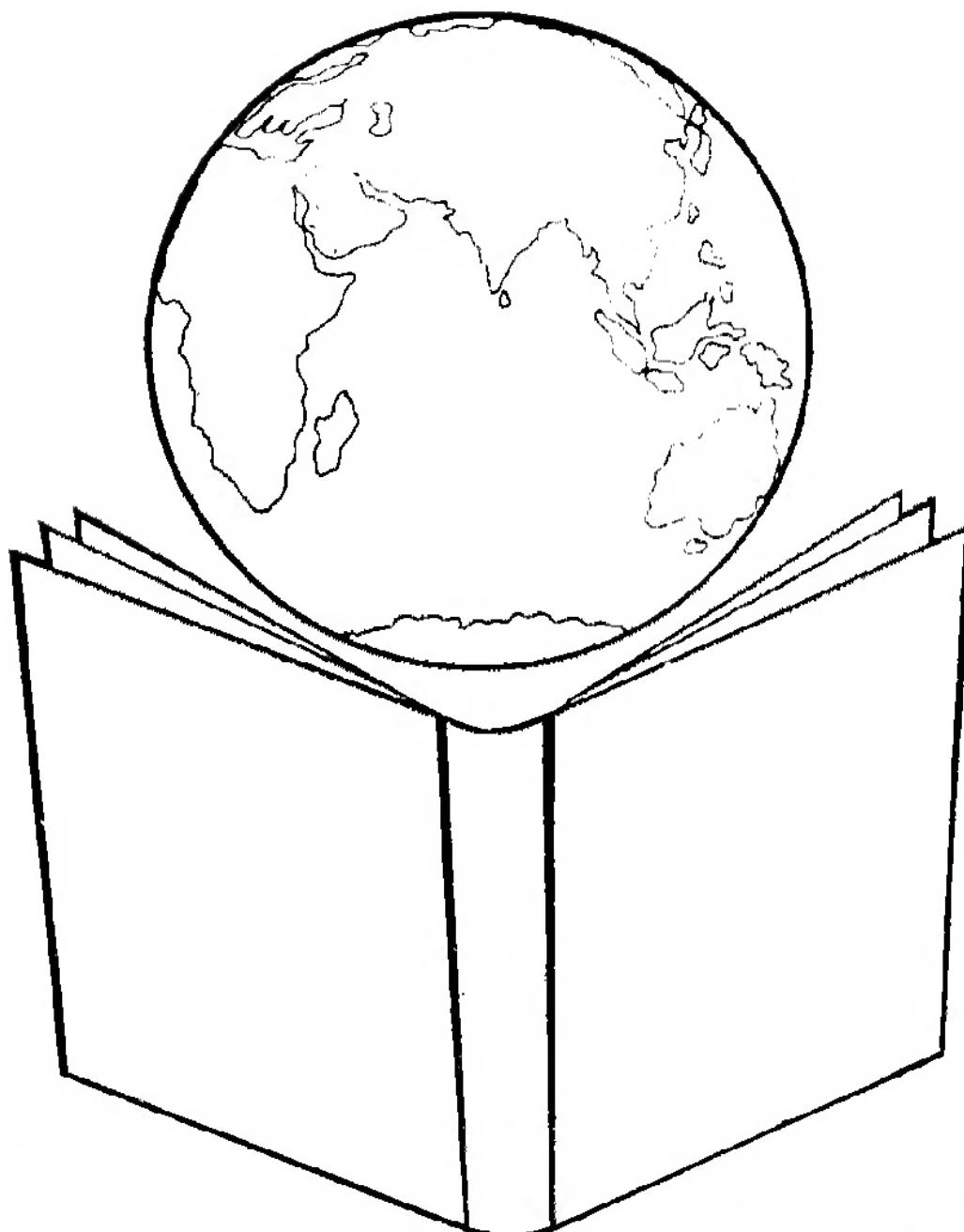
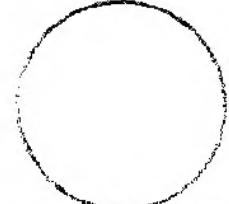


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Fiesta of Books

Seventh New Delhi World Book Fair being organised by the National Book Trust in collaboration with the book trade federations from 7th to 17th February 1986, will be inaugurated by Shri R. Venkataraman, Vice-President of India. The first New Delhi World Book Fair was held in 1972 in celebration of the 'International Year of the Book'. Over the years, the New Delhi Book Fair has grown both in size and stature. Now rated as the biggest book fair in Asia, the Seventh New Delhi World Book Fair is likely to attract about 550 Indian and 75 foreign booksellers and publishers from about 40 countries. There will be books for everyone ranging from the colourfully illustrated children books to the latest books on computer technology. The choice of the language will also be as varied as the books displayed—Hindi, English and other Indian and foreign languages. Educational aids like audio and video cassettes, gramophone records, maps, globes and atlases will also be on display.

A number of seminars are being organised to synchronise with the Book Fair. A seminar on 'Children and Books in an Information Age' will be organised by the National Book Trust. 'Disseminating Scholarly Books of the Asia Pacific Region' will be the theme of another seminar to be organised by the International Association of Scholarly Publishers, Manila, in association with the Federation of Indian Publishers. Another seminar on 'Effective Implementation of ISBN System in India' has been planned by the Raja Rammohun Roy National Educational Resources Centre. 'New Education Policy vis-a-vis Library Development in India' is the subject of the seminar being organised by the Indian Library Association. The string of these events reflect the popularity and the prestige that the New Delhi Book Fair has come to enjoy.

By projecting the productivity of the book industry in its full range, the book fairs index the intellectual health of the people. They promote book mindedness by exposing lakhs of men, women and children to the magic of the printed word. They bring to the Librarians' notice new books and new publishers and aid in the fair and balanced book selection. Over and above, the book fairs provide a forum to the authors, publishers and distributors from all over the globe to talk over their common problems, negotiate rights and distribution deals, and sign new contracts. The Seventh New Delhi World Book Fair will serve all these objectives and contribute to healthy growth of scholarship. It is to this spirit of international co-operation in the promotion of scholarship that we dedicate this special issue of University News. □

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M.S. RAMAMURTHY

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ISHTIHAAR

BOOKS AND OTHER MASS MEDIA

Abul Hasan*

In the present era of communication explosion, books can no longer be separated from other media of communication. Yet, the book has certain special characteristics which enables it to hold its own as the most essential tool of learning and communication.

Books serve as a repository of the cultural heritage of a people and a valuable instrument of preserving and disseminating it. The printed word endures for successive generations of readers and is read over and over again. Books are the simplest, most easily handled and readily accessible means of communication and education.

Books convey information, especially of a high order of complexity, to a large audience with more penetration than do the instant media. With more enjoyable and colourful transmission of information and knowledge, the instant media appear to have a more agreeable consumption, and can easily reach larger number of people simultaneously than books can. Yet, reading a book engages and occupies an individual far more deeply than listening to radio or watching television. Hence, retention of the information conveyed is more enduring. In other words, the book serves basic, advanced and continuing education in depth in a way in which radio, television and other mass media cannot. The reader has to make a creative effort to receive the message, to reconstruct it and to integrate it into his own thought pattern. Unlike the cinema or the television viewer, the reader has also the advantage of regulating at will the rate at which the different sequences are presented to him and to return to earlier passages as and when necessary. With this possibility of re-interpretation, reflection and retrospection, the reader is not merely at the receiving end but is in constant dialogue with the author.

A great quality of the book is its inexpensiveness. The book industry is capable of efficient organisation in small enterprises. The book industry is labour-intensive and its claim on the capital resources of a nation are quite modest. Even in the most advanced countries, book production represents hardly one per cent of the Gross National Product.

The book industry exerts a social influence far greater and more pervasive than its economic size indicates. Book play a special role in response to social requirements of Communication. Apart from the exceptional cases of subsidised publications, a book is financed entirely by the price which the purchaser pays for the final product. Because of its independence from the advertising revenue with which newspapers, mass circulation magazines, and to some extent radio and television are menaced, the book is a vehicle for the new, experimental voice, and for the expression of minority views, dissent and criticism.

In short, the book possesses certain peculiar advantages over other mass media, viz. endurance, economy, accessibility, freedom of choice and control of use. However, the other mass media have their own supporting role in education and communication. In the world of today, none of these media can yield optimum results if they are utilised to the exclusion of others.

In the face of the stupendous advances made recently by audio-visual and data-processing techniques, some thinkers have been prophesying the extinction of the "Gutenberggalaxy", although they themselves communicate their anxiety about this alarming trend mostly through the medium of books. In their view, books have no future in printed form because a whole library can now be stored in a match box in the form of silicon chips. Despite all these innovations, the World Congress on Books convened by Unesco in London in June, 1982 has reaffirmed its faith in the future of the printed book in view of the afore-mentioned qualities peculiar to the book, and has declared that books will continue to be "pre-eminent as vehicles for information, education and research, and a source of culture and recreation, serving national development and enrichment of individual human life."

The increasing use of audio-visual media has not led to any decline in book production. The world book production continues to rise—the latest available figure being 7,65,500 titles produced in 1982 compared to 6,42,000 titles in 1978, although the gains are not evenly shared and the bulk of the demand remains unfulfilled in all the developing regions. About 80% of the total book production remains concentrated in 34 industrialised countries which represent only 30% of the world

*Deputy Educational Adviser, Department of Culture, New Delhi.

(Continued on page 10)

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UNIVERSITY NEWS, FEBRUARY 8, 1986

Formulating A National Book Policy

Amrik Singh*

If we do not have a national policy for books so far, this is more or less in line with our general approach to problems of human development. We do not have a clearly formulated policy in regard to the youth, sports or even education. Most decisions that get taken are ad hoc in nature. They are usually in response to pressures from various directions and the overall thrust of these decisions is that the immediate issue is taken care of but the overall perspective is always missing.

There is one important difference however. In regard to various other sectors—sports and education for instance—there are vested interests of one kind or another. The general situation being what it is, policy-makers find it difficult to resist them. In the case of books there are hardly any pressures. Nobody is opposed to more books being published and sold. Nobody with any show of reason can say that we should not have more and more of them. All those who are professionally concerned with books—writers, publishers, book-sellers, librarians—have the same objective and that is to see that books are made available easily as well as cheaply. There is no conflict or incompatibility amongst the various interests connected with book publishing and book trade. In plain words, there are no vested interests of any kind which would prevent the policy-makers from taking the right decisions.

Myopic Policies

Where then does the difficulty of having a national book policy lie? The answer is simple. Those who are concerned with policy-making have not given the importance to books, libraries, the problems of publishing and the requirements of intellectual life in an integrated manner. Problems are attended to as and when they arise. Some marginal help is also extended to publishing and related activities. But no one has a clear enough perspective of the problems of human development and the role of knowledge in fostering it.

Over the last three decades and more, the country has made a herculean effort in regard to the spread of education. That the results achieved are not entirely satisfactory is another matter. But of this there is no doubt that enormous resources have been invested in spreading education. When it comes to *publishing and libraries, the two supporting activities*, the effort has been hardly ten percent of what it ought to have been. May be one can say that one important reason why this impressive educational effort has not been as productive as it could have been is the neglect of these two allied activities. To assume that the State has per-

formed its duty when it has established a large number of schools, colleges and universities is to have a very limited notion of what it takes to develop the country.

It is therefore important to recognise the interdependence as well as the mutually supportive role of the various sources of knowledge. Their growth has to be according to an integrated plan. To develop one sector and neglect the other is to weaken the whole edifice. This is precisely what has happened over the years. In consequence, a kind of imbalance has been created. It requires to be redressed now. If that is not done at an early enough date, it will weaken the thrust of the educational endeavour also.

No country can develop till it both generates knowledge and makes it available to all its citizens. When it comes to the generation of knowledge, our attitude is utterly *colonial*. We feel that we can make do with *imported knowledge*. That it is becoming increasingly difficult to do so is a separate issue and need not be dealt with here. In any case, beyond a certain stage one cannot import knowledge; nor is it consistent with the dignity of a country like India.

When it comes to the dissemination of knowledge, let us recognise that all these years we have neglected our basic obligation of making it available to every adult. Not only have we neglected adult education, we are not even helping the literates to stay literate. Most of them lapse into illiteracy because books to suit their interests and requirements are not available. As if that was not unforgivable enough, we do not make use of all the modern resources for keeping the citizens abreast of what is happening around them. Books are the most important source for doing that. Those who can read should always have access to books so that if they want they can renew their knowledge. Without a well-developed library system no country can attain its objective. Can we in India follow a path of development which is different from other countries? In every developed country, knowledge is central to its functioning and organisation. So should it be in India.

Need for National Policy

The case for having a national book policy is thus obvious. In addition to what has been said, there are three other important reasons why such a policy should be formulated soon and implemented vigorously. To repeat the first one, in the absence of a strong infrastructure of publishing, libraries and the general availability of books, the quality of education will not improve. These are important inputs and have to be provided in much greater measure than has been done

so far. Secondly, it is not the Ministry of Education alone which can formulate or implement this policy. That requires the active co-operation of a number of other ministries of the Central government. Those that have an obvious role to play are the ministries of Industry (manufacture of paper and printing machinery), Commerce (import policy in relation to books), Finance (credit and other banking facilities), Communications (postal rates), and a couple of others.

Thirdly, though the Central Government can formulate the policy and implement it to some extent, unless State Governments too are actively involved in its implementation, bottlenecks are bound to arise. While formally a Concurrent subject, education is to all intents and purposes a State subject. The problems of regional languages can be taken care of only by the State Governments. When it comes to the establishment of libraries and siting of bookshops in suitable areas, the principal responsibility will be that of the States. For this and various other reasons, it is a matter of some significance that whatever policy is formulated, is at least subscribed to, if not actively implemented by the various States.

Fourthly, in order to ensure that the national book policy is implemented effectively considerable financial support would be required. Funds of the required magnitude can come only from the State, though one must hasten to add that that would be only in the beginning. Eventually, and properly speaking, capital resources would be generated by the ever-widening circle of readers. They would buy books and provide recurrent capital for the industry. But in order to encourage readers to buy books, the intervention of the State is crucial, particularly in the beginning. *Our system of education does not foster the reading habit.* The reading habit, as is universally known, is formed in the pre-adolescent stage. Availability of the right kind of books for children at that age is therefore a pre-requisite for the reading habit to grow. Another pre-requisite is the easy and cheap availability of books. For the first pre-requisite to be met, the educational policy has to be suitably modified and this cannot be done without the State taking a hand in it. As to the second pre-requisite, establishment of a large number of sale outlets and a network of libraries is important.

Importance of Libraries

The role of the libraries in the building up of a congenial book culture must be understood clearly. Even today, despite the limited library facilities that the country has, it is the libraries which buy the bulk of books sold in the country. (Text books belong to a different category obviously). Strengthening of the library system is thus the key to the development of publishing as an industry. If libraries are starved of funds, as has happened of late, or if the libraries are few in number, as has been the general pattern all

these years, it all adds up to one thing : books are not sold because the demand for them is limited. Individuals do buy books but the sum total of what they buy is not more than 10% of the total sales. 90% of the books are sold to libraries, whether they are college or university libraries or public libraries. Public libraries exist only in a few places. Some of the South Indian States, notably Kerala, have done some good pioneering work in this regard. The rest are virtually indifferent to this important public service

Establishment of libraries should not be regarded as an amenity only. Libraries are in every sense of the word a service to which every literate citizen is entitled. But then we almost live in semi-literate society. Instead of feeling indignant about it, we tend to accept the situation. One way would be to make the remaining two-thirds also literate. The other is to allow even these one-third to lapse into illiteracy. Sad to say, our policies incline towards the second option rather than the first option.

Even if it is accepted that we must have a national book policy, who is to formulate it and how it is to be implemented ? These are important questions and must be answered properly. Perhaps the simplest answer would be to suggest that a statutory body should be established at the Centre. This body should both lay down a policy and ensure its implementation. This body should also be sufficiently high-powered so as to be able to win the cooperation of the States. Without their cooperation, the policy cannot be implemented fully and effectively.

May be the Centre operating on its own can help publishing as an industry. But will the industry rise to its full stature as well as remain viable without the help and collaboration of the States ? Unless a network of libraries is created all over the country, the gains would be more notional than real. This can be done only when the States are convinced of their usefulness and also find resources for them. The Centre can prompt and prod and to some extent even provide funds but the essential job has to be done by the States themselves and possibly out of their own resources. To leave the States out of reckoning, as is argued by some people, would be to take a short-sighted view of things. Books will be produced and sold only when there is demand for them. The demand is generated at the grassroots level and there the role of the States is crucial, indeed indispensable.

Most people concerned with publishing today talk somewhat nostalgically about the National Book Development Board which functioned somewhat fitfully more than a decade ago. Even when it functioned it had no executive power. All that it did was to provide a useful forum for discussion. But for reasons not stated publicly it has not functioned for almost a decade now. To pine and plead for its revival is an example of

timid thinking, if one may say so. What is required today is not an advisory body but an *executive body*. In our context this would mean a statutory body which has the stature and the resources to formulate a policy as well as to ensure its implementation.

In recent years some people have occasionally talked of a Book Finance Corporation more or less on the lines of the Film Finance Corporation. The idea is sound. Publishing as an industry does require considerable inflow of capital into it. But the question to ask is which of the two—book publishing or book selling—requires to be supported in the first instance. In my opinion, while publishing may receive 50% of this support, 50% of the support should go to the selling of books. This is for the reason that the basic problem with Indian publishing is its inability to sell books. Sale outlets are limited in number and on the whole deficient in capital resources. A book shop has to be both well located and well stocked before it can attract customers. Given the price of books today, even a small bookshop requires a large outlay. Libraries do not pay in time and there is no obligation placed on them to pay in good time. On the one hand this system breeds corruption, on the other hand it impedes the rotation of capital in the book trade.

The need of the hour therefore is to expand and strengthen the book trade. Even a small town should have a bookshop and large sized towns and cities should have a number of them. This would require an input of something like Rs. 40-50 crores spread over the next 4-5 years. If this much capital can be made available to the book trade, publishing would automatically improve. All that the Indian publishers require today is some *elementary protection against foreign competition*; for the rest they can look after themselves. With more inputs into book selling (and this would include the strengthening of the library system), the publishing industry would begin to perform well. It has done some creditable work in recent years. Within a span of 4-5 years, its export performance can grow from 7 to 50 crores. Once a statutory body with the requisite powers is established, the bottleneck now being encountered will be completely overcome. It is not necessary to have a separate Book Finance Corporation. This function could very properly be performed by the statutory body itself. Indeed to have two separate bodies performing these two functions separately would be both illogical and self-defeating. The correct thing would be to make the statutory body as high-powered as possible. Perhaps it would not be a bad idea to bring bodies like the National Book Trust, Raja Ram Mohan Roy Foundation and the Publications Division also under its purview.

Two other inter-related aspects of the issue may also be referred to here. One is in relation to the needs and requirements of publishing in regional languages. Secondly, in order to understand this issue it is important to analyse what the State has done so far in this regard.

Most of what is stated here is from the urban point of view and indeed with its accent on English publishing in India. These reasons however should not be regarded as decisive enough to dismiss the argument out of hand. India is the third largest publisher of books in the world. What is being done in this area today is not inconsequential therefore, particularly from the export angle. Furthermore, the problems of regional publishing are basically not different in character from what has been discussed here. Regional publishers too are starved of capital and they too find it difficult to reach the readers. In a sense their situation is worse. In towns and cities there are some sale outlets and a few libraries. In the country-sides these are altogether absent. What they need therefore is much greater help from the State than is visualised here.

One problem is particularly prominent in the country-side. A large number of adults lapse into illiteracy because suitable literature is not available to them. In particular, it is the literature of knowledge which is not available to them. If for instance a farmer wants some elementary knowledge, say, about bees, it would be difficult to assert that every Indian language would have something available on the subject and at the level at which he requires. Most Indian languages are languishing because enough literature of knowledge is not being produced in them. Imaginative literature has been certainly produced which is what keeps the languages alive. But what is required is growth in the literature of knowledge so that those who are engaged in productive work can, if they wish to, increase their knowledge and their productivity. Hardly any attention is being paid to this problem.

One important reason for this particular form of neglect is the way the State has gone about promoting the development of Indian languages. Most of this effort has gone waste for the simple reason that the mechanism adopted has been bureaucratic and unimaginative in character. Governmental procedures are not attuned to so unique an activity as the production and distribution of knowledge. *Every book is an independent entity*. In that sense it is different from every other book. Every book has consequently to be dealt with as a unique product. It is unique in terms of its writing, editing, production as well as its distribution. For this reason the procedures that would work elsewhere would not work here.

The difficulty about procedures operates not only in respect of the writing and the production of books but also in respect of the failure to ensure that the funds invested are put to proper use. Millions have been sunk into helping the Indian languages to grow. There has been some growth no doubt but most definitely not in proportion to the funds invested. What is to be done in this situation? The short answer is that, whether one likes it or not, publishing is one activity where the commanding heights would be willy nilly controlled by the private sector. [Courtesy : Indian Book Chronicle]

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Challenge of Education : Role of Books

K. K. Ghosh*

The haphazard process of selection and acquisition of books both for higher studies and research work as well as for curricular studies that has been practised over the years since the British period is still continuing. Our policy makers, with all their genuine efforts, have all these years been trying to improve the quality of book production, authorship, editing and compilation to improve standards, but the acquisition and selection processes were sadly ignored without proper national guidelines enunciated. As a result of this, there is no uniform policy of book selection or purchase in different institutions or universities. Some institutions appoint vendors, and only through the authorised vendors do they purchase books, irrespective of the fact, whether these vendors are quite credit-worthy to bring the best books—both indigenous and foreign—for selection. As foreign books are more important for worldwide research findings, these vendors who are mostly local booksellers familiar to the librarians in mafasil towns, are not direct importers in most cases and procure foreign books from second-hand sources. Even when they come to the Capital towns like Delhi or Bombay to collect books from foreign publishers' agents or branch offices, satisfactory collection is not made for want of sufficient credit.

In some of the institutions again—particularly in all the institutions of Gujarat—quotation system is in vogue for purchase of books, and the lowest tenderer, whatever his credentials might be, is awarded the tender for supply. The result is that unscrupulous booksellers offer the highest discount and get the award, and when in the end of the library purchase season, they are unable to supply the required books, the library authorities for fear of getting their funds lapsed at the end of the financial year, select from whatever books that are offered. In this way, unethical trade practices are fostered in contravention of the rate and discount schedule fixed by the Good Offices Committee, the representative body of librarians and the book trade.

Some institutions again put emphasis on selection of books in which more discount is offered rather than on acquisition of limited but the best books. Here quality is sacrificed for acquisition of more books within the sanctioned limit.

In some universities, the libraries start their own university bookshops, so that suppliers have to pay the trade discount instead of the institutional discount

which is half the trade discount as fixed by the Good Offices Committee. These universities, demand ten percent more than the usual trade discount. As a result of this, these universities do not get the facilities directly from the publishers of being abreast with latest literature or physical inspection services in their campuses.

Finally in the selection processes, no doubt the Faculties, Deans and Scientists make recommendations, but as the final procurement is made by the librarians, where the recommending authorities do not usually interfere, everything does not go well in the final acquisition process. In some libraries books are taken without acknowledging receipt, as a result of which smooth supplies are handicapped. In some Libraries again, elaborate complicated processes in accepting recommended books are in vogue, and in some again, books are accepted on approval but are not sent back if not selected.

In the matter of recommendations again, the recommending authorities—the Deans, Professors and Scientists—suffer from the handicaps of inadequate literature brought to their attention, for making right selections with reference to catalogues and publicity material. Of course the Books in Print might be a good guideline, but very often than not physical inspection becomes necessary. In the physical selection process therefore, thanks to the National Book Trust, the Publishers & Booksellers Guild of Calcutta and the Publishers and Booksellers Associations of Bombay and Madras. Book Fairs are organised from time to time to physically inspect the books on display in the different stalls. In some of the Scientific Congresses and Conferences, no doubt arrangements are made for display of books in relevant subjects, but the rates are so prohibitive that participation by publishers and distributors, does not become commercially viable. Finally some publishers organise campus exhibitions in institutions and universities, thus enabling faculty members to make on-the-spot selection on physical inspection.

Thus in the formulation of the new educational policy, it is imperative that the process of selection and acquisition of books should be on a sound footing and not based on individual caprices or be guided by unethical practices or be in the hands of auditors to guide purchase procedure through quotation. Books are not similar to other goods purchased in stores. These should be judiciously selected for the maximum utilisation of funds given for advancement of education and research, whatever the process adopted for qualitative selection.

*Formerly of Calcutta University Press and Publication Department.

To evaluate a policy in this direction, two most important things are (i) availability of sufficient publicity material, and (ii) books for physical inspection. To this end, there should be a centralised dissemination centre, which should disseminate information country-wide to institutions according to needs. This dissemination centre should tie up with a national documentation centre to collect information.

For physical inspection of books, there should indeed be one-two-or even three central libraries in each State which should be reading instead of lending libraries, with top academicians and scientists to be on the advisory panel in acquisition process. Each such library should have three wings of science, engineering and humanities. There should be mobile units to connect these libraries with the different universities and institutions in the State. Finally there should be exchange of publications from one central library to another. Publishers, booksellers and distributors should also be encouraged to organise campus exhibitions themselves and also participate in national and international congresses and fairs.

In order to inculcate book reading habit among young people, it is important that every institution should have sufficient funds, not for duplicating purchases of books available in central libraries as detailed above, which is done now, but for presentation to students sometimes as concessions and sometimes as prizes to form their own individual libraries, and extension exercises should be taken from time to time, to evaluate that they have actually read these books. Likewise advanced students, professors and research scholars should be given books to prepare thesis on the respective subjects in which books are given. Moreover just as the E.L.B.S. System provides low-priced editions of important books with subsidy received from

the Government, similarly, the participants in exhibitions and fairs in the trade, should be given subsidies for concessional sale of books. This and in various other ways, can book reading habit which is so vital inculcated.

Our educational structure which is not employment oriented, should be vocationalised upon which emphasis is given in country-wide discussions on our new educational policy. But does vocationalisation mean opening a large number of Institutes of Technology or Polytechnics ? Or does it mean formulating new curricular studies with greater reorientation in technical side ? Here it is necessary for coordination—just as is done in industrial collaboration—to bring out books suitable to our requirements by co-authorship programme, to be fitted in with our syllabus. In preparing our history and economics books also, we should bear in mind the world context in preparing them to suit our own requirement of a society in diversity or an economy overburdened with population. All these can be tackled by a National Book Development Council soliciting joint authorships.

In the field of women's education, it has been an anachronism, and the concept that it is the mother who builds the nation is forgotten. The curriculum in the field of Women's education and the accompanying texts should be so oriented, that women may not be prepared to be substitutes of men in profession, but they be exclusively suited for a different sector in our economy and be geared accordingly keeping in view our traditional idealism of womanhood. Sex education is not condemnable so far as it helps character building, but books towards that end should be prepared without encouraging pornography. It is this and in various other ways, can we meet our challenge of education by proper selection, production and marketing of books, through a centralised process. □

BOOKS AND OTHER MASS MEDIA

(Continued from page 3)

population. Similar disparities exist in respect of other media of communication also. The extra-ordinary development of audio-visual techniques does not have much to do with the decline in the public taste for reading. In the most industrialised countries which make an abundant use of electronic media, it has been found that after a sharp initial expansion the rate of development in broadcasting, and then in television, is showing a progressive tendency to drop back to the level of that for books. Indeed in a rational information system the increasing variety of ways and means of imparting knowledge or making communication does not result in the replacement of one approach—the printed word—by another—the picture, but, on the contrary, gives rise to the need for a composite approach

combining both operations of the mind for its greater development. A judicious communication policy should make a balanced use of various media to maximise the impact.

It is true that even in developing countries certain types of books may have to be used with the help of accessories like magnetic tape or gramophone record. But, by and large, the book will continue to reign as a storehouse of knowledge, a repository of culture, a social asset and a valuable pastime. It is also true that some select libraries may prefer to keep certain printed pages in the form of micro-fiches or micro-chips. But that is a question of form, not of content. The message remains intact. If at all there is a problem, it relates to the book of the future, not the future of the book. □

Publishing in Indian Universities

B. M. Dureja*

The post-independence period witnessed a phenomenal growth of Universities and Colleges. This necessitated increased publishing activity to meet the increased demand for books. Indigenous publishing enterprise rose to the occasion and contributed in a big way to meet the challenge. The government agencies also entered into the publishing field. As a result, India now ranks as the third largest publisher of books in English language after U.S.A. and U.K. About two thirds of the books published are textbooks while the rest are of a general nature.

Publishing in Universities has, however, been rather sporadic. There has virtually been no attempt at specialisation in scholarly books and the universities have published everything from textbooks to research journals and translations to promote regional languages. They have indeed published everything except, of course, children books that is published by any commercial publisher in India.

About 70 percent universities have press establishments. This is quite encouraging as own presses help in speeding up the matter. The number of titles published so far varies from 30 to 750, the highest being produced by one of the first three universities to be set up in India in 1857, namely the University of Madras. The universities of Andhra, Bangalore, Bombay, Calcutta, Gujarat, Guru Nanak Dev, Karnatak, Madras, Nagpur, Osmania and Panjab, to name a few, are the ones that have fared better than others.

Special universities/institutes like S.N.D.T. Women's University and the Tata Institute of Social Sciences have also done well.

In universities the minimum print run for journals and general books is 250 to 550 copies while the maximum is 1100 copies. In the case of textbooks, however, it is determined by the student population.

The organisational set up also varies from university to university. While in some universities it is an independent department, in others it is usually placed under the supervision of the Press Manager/ Superintendent, Controller of Printing and Stationery, Librarian or even a Deputy/Assistant Registrar.

As far as the marketing of university publications, journals is concerned, the position is none too happy. The universities sell publications either through sales

counters or through authorised dealers/agents or both. None of the universities has travelling salesmen nor is there any regular persistent campaign at Sales Promotion. The publicity material is usually non-existent and where it is produced, it is least attractive. Not to speak of descriptive annotated catalogues even the Price Lists are not issued regularly. The marketing techniques are not adopted by the universities to boost the sale of their publications. As a result, large stocks of titles are accumulated in university warehouses. This happens not only in the case of general books and journals but textbooks as well. This single factor makes the publishing programmes of the universities uneconomic.

The private publishers are not publishing scholarly and general books because of their limited market and poor return. Scholarly publishing which has a great bearing on the growth and development of scholarship and is of vital importance to the academics rests solely on the initiative and enterprise of the university presses. It is, therefore, very important for scholarly publishing that university publishing is placed on a firm foundation and made thoroughly viable. University Presses can no longer be treated as bureaucratic departments and have to be managed on commercial lines in matters of pricing and sales promotion. Their pricing should allow for trade discounts to interest the trade to take up their distribution.

In addition it is also suggested that the Association of Indian Universities:

- (i) may take up publicity and promotion work on a centralised basis on behalf of the Indian Universities. This is necessary because most of the universities have brought out too few books in too many subjects. Thus making promotion too expensive individually. It is an effective way of reaching a larger audience at lower cost. The authors will also get wide publicity and the universities will register increased turnover.
- (ii) could also offer publishing facilities and services to such universities which do not have their own printing presses, or those who have them and are bogged down with the printing of university stationery and other works for which it takes years to get a manuscript published or even those who do not have the necessary expertise. The Association could offer editorial services and publishing facilities to such universities in a centralised manner.

* Sales and Publication Officer, Association of Indian Universities, New Delhi.

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New Education Policy : Need for Bold Thinking and Courageous Action

J. N. Kapur*

The document "Challenge of Education : A Policy Perspective" is excellent so far as it goes; but it does not go far enough. It gives a good overview of educational development in the past, a critical appraisal of the present and an approach to educational re-orientation in the future.

It is not a Policy Statement; it is not even the draft of such a policy. It is only a Policy Perspective. Its objective is praiseworthy; it is to facilitate the emergence of a New Educational Policy through a National Debate. The object is certainly not to impose a policy by the Government. As such it poses a great challenge to the academicians and the general public to suggest the contents of a National Education Policy which will usher India into the twenty-first century with great momentum and enthusiasm.

The Policy Perspective does not enter into controversial issues, it does not suggest any remedies which would hurt deeply entrenched vested interests and as such it does not give a vision of the Future of Indian Education. At the most it gives a very dim vision which is not sufficiently clear to inspire either criticism or enthusiasm. It has left many things unsaid, but which nevertheless have to be stated and stated strongly. We have to start from where the Policy Perspective ends. We start by stating what is missing in the document.

Omissions in the Policy Perspective

(a) After reading the Policy Perspective, one gets the feeling that it is highly desirable to make some changes in the Education System and it is even necessary to do so; one however does not get the feeling that drastic steps have to be taken urgently if India has to survive as a nation, all of whose citizens can lead a life with physical, economic, political and intellectual dignity. It does not give a vision of what India can achieve when the human resources of about one hundred crores of persons are fully developed through proper education relevant to the modern science, technology and information-dominated world. In this world, human resources are much more valuable than material resources; and brain power is much more

important than muscle power. In this world every highly skilled person is a great asset and every unskilled person is a great liability and in this world poor quality education may be worse than no education. A population of fifteen crore skilled and 85 crore unskilled persons will be worse off than a population of ten crore skilled persons.

(b) The Policy Perspective does not even attempt to make an assessment of the resources required to transform a Society where only at the most ten percent persons receive proper education; thirty to fifty percent receive some education and the rest do not receive any education worth the name to a society where almost everybody receives proper education, in a period of fifteen to twenty years. We have first to get an estimate of the required resources, only then we can discuss ways and means of raising the resources. Obviously conventional methods will not enable us to raise the required resources and we have to think of unorthodox methods for the same.

(c) The Policy Perspective discusses the reasons for the non-implementation of the earlier Education Commission's recommendations. It also talks of the vested interests which obstructed such implementation, but it does not expose them sufficiently well and it does not suggest a frontal attack on these vested interests. The major weakness of our present education system is that it is not being implemented in good faith and it is being ruthlessly exploited by vested interests and nobody is daring to fight these vested interests. These vested interests are already laughing in their sleeves "The National Educational Policy will come and go, we will go on merrily as ever, we will go on condemning the education system and go on exploiting it in our interests as ever". The National Education Policy must contain an explicit statement about fighting these interests.

(d) The Policy Perspective does not discuss man-power planning, it does not talk of continuous retraining of persons in various vocations according to the needs of the times. The needs of jobs go on changing, but there are no facilities for retraining on the scale required. Even the Open University may start by giving some

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former Vice-Chancellor, Meerut University.

education which is given by present-day universities, while needs of millions of persons for continuous re-training go unattended. The 'Educationalisation of Vocations' is even more important than 'Vocationalisation of Education', but the Policy Perspective does not talk about it.

VESTED INTERESTS IN EDUCATION

(a) Vested interests of politicians

In the prevalent atmosphere of corruption and nepotism, the weak educational system is particularly prone to exploitation by interested politicians since it offers a vast scope for distribution of favours in admissions, appointments, transfers, examinerships, prescription of text books, memberships of university bodies and of governing bodies of colleges. Politicians get their cadres of students and teachers to fight their political battles and the student and teacher members of these cadres are given immunity from the disciplinary powers of Principals and Vice-Chancellors. These students can copy in examinations and can help others in copying and nobody dares take action against them because they have a political backing. The teacher politicians need not teach and they can get themselves transferred to any place they like. The presence of such groups of privileged students and teachers spoils the whole academic climate in the university. It also creates an impression that pleasing politicians and those in power is more important than studying and teaching properly. Unless rewards for scholarship are based on scholarship only, scholarship cannot prosper. The wide-spread feeling among students, that their capacity to get jobs depends more on the influence of their parents than on their own merit has worked like a cancer for the educational system.

(b) The vested interests of teachers

There has been a wide-spread concern about stagnation of teachers in their salaries and various agencies like the UGC have approved of schemes of personal promotions to remove this stagnation. There has however been no equally wide-spread concern about stagnation of teachers in their knowledge. In today's world, a teacher has to go on learning continuously in order to teach new topics needed by students. Many teachers have not learnt anything significantly new after joining the teaching profession. About fifty percent teachers are not competent to teach what they are teaching and about seventy percent cannot teach the topics that should be taught in the modern world. An educational policy that does not link promotions with increase of

knowledge of teachers is doomed to failure. There have to be extensive retraining programmes of teachers and incentives have to be linked to performance in these programmes. Teachers have to be provided sufficient incentives to do research and sufficient incentives to teach well. Student assessment of teachers is a must. Today a teacher is not accountable to anybody. He cannot be assessed by his students because students can be biased. He is not prepared to be assessed by the authorities because they are not fair. In other countries students assess their teachers and even make their assessment public. The authorities assess a teacher and may not confirm him for five to ten years. There is a peer climate in which teachers who do not continue to study are looked down upon. Many teachers today in our country have a vested interest in the present weak educational system. They need not take pains with their teaching, they can make extra money by engaging in tuitions and they need not study anything new. They can mark papers carelessly in subjects which they do not even know and because of the secrecy of the system, nobody can question their judgement. A new educational policy has to ensure that teachers take greater pains with their students and with their studies, that they become answerable for the answer-books they mark directly to the students, that all incentives are provided for good performance and all disincentives are provided for poor performance. A system in which every body gets the same rewards irrespective of his performance cannot be the basis of a good educational policy.

(c) Vested interests of students

Students can get degrees today without putting in hard work. In the external examination system, students can do well by working hard for one or two months near the examination and taking it easy throughout the rest of the year. An educational policy which can enable a student to get a degree without continuous and regular work for at least forty-five hours a week throughout the year cannot be called a successful policy. In many countries of the world, higher education is accessible to only those who deserve it and then the students have to earn money to pay for costly but good education. Here we give higher education to almost everybody, the fees are very low and many students come to colleges to enjoy life and to get degrees by fair means or foul. Higher education should be accessible to only those who deserve it. Fees must be raised and students should be enabled to earn money to pay for their education through government subsidized student jobs. Complete and continuous internal assessment has to be introduced and this assessment

has to be completely open to every body to eliminate its misuse. Students will be prepared to work if they know that they can get degrees only by doing hard work and jobs will be distributed in the country on the basis of merit. There should be checks and counterchecks provided both in the normal examination system and in the job selection process by eliminating secrecy and by action against defaulters. Professional students leaders who join the educational system for political ambitions will be automatically eliminated once regular work is expected every day of the year.

(d) Vested interest of general public

All the influential persons in present day society can get jobs for their children even if they have got only paper degrees. The present system suits them because the system enables them to pass their privileges to even their undeserving children. In a fair system, some of their children will not be able to compete. As such while decrying the present education system they take all steps to prevent major reforms in it.

RECOMMENDATIONS

The New Educational Policy should include the following statements :

- (i) The New Educational Policy aims at Quality and Excellence in Education at all levels and it will not allow interests of individuals or groups to come in the way of achievement of this goal;
- (ii) All admissions to all educational institutions will be made strictly on merit according to rules and criteria made and published in advance. No reservations, except those required by the constitution will be allowed;
- (iii) Education upto higher secondary level will be available for every body, but tertiary education will be available only to those who have proved their ability to benefit by it and admissions will be regulated according to the facilities available;
- (iv) All assessment will be continuous, internal and open. Students and parents will have the right to see and discuss the answer books with the teachers;
- (v) Universities can conduct their own admission examinations;
- (vi) All incentives will be provided for continuous learning and good teaching to all teachers. All promotions of teachers will be made on merit only;
- (vii) There will be no hesitation in weeding out incompetent teachers or students from the educational system;

- (viii) All efforts will be made to ensure that all appointments in both private and public sectors are made strictly on merit and the appointment process will be made as open as possible. At least all efforts will be made to see that all appointments and promotions of teachers are made on merit;
- (ix) All incentives will be provided for in-service training of all persons in all professions. High academic and technical qualifications will be prescribed for every job and nobody will be allowed to hold a job or practice a profession without these qualifications;
- (x) Adult education will be given a priority by providing incentives to those who attain a certain level and disincentives to all those who do not attain this level. All illiterate or semi-literate persons in any job will have to acquire this minimum level within a certain period. This level may be class VIII in 1990, class X in 1995 and class XII 2000 A.D.;
- (xi) Research in educational innovations and new ideas will be encouraged;
- (xii) Necessary funds for raising the level of every educational institution to certain well-defined national minimum levels will be provided so that there is no institution not satisfying these levels by 1995;
- (xiii) All cases of corruption and favouritism in the educational system will be ruthlessly dealt with; and
- (xiv) A report on the implementation of the New Educational Policy will be presented every year to Parliament.

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7-17 February 1986

PROGRAMME

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-do-

-do-

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NOTE : Those who are appearing in the Bachelor's degree examination of different Universities in India can also appear in the above entrance examination, provided that their results are positively declared by 5th July 1986 for the purposes of admission in First Semester 1986-87. Otherwise they will be considered for admission in the Second Semester 1986-87 only starting in January 1987, subject to availability of seats and merit position, and their degree examination results being declared positively by 15th Dec. 1986.

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The programme for which the Application Form is required must be written in BOLD Letters on the self-addressed envelope.

LAST DATE FOR RECEIPT OF APPLICATIONS : Upto 20th March 1986 till 5.30 P.M. with fees of Rs. 50.00 (Rupees Fifty only) for all Centres, and from **March 21 to April 4, 1986** till 5.30 P.M. with a late fee of Rs. 50.00 more in addition to the prescribed fee of Rs. 50.00 i.e. with Rs. 100.00 in all, for Pantnagar Centre only.

NOTE : In the B.Sc. (Forestry) programme, First Year courses for 1986 Batch of students shall be conducted at the College of Agriculture, Pantnagar, and in subsequent years, the programme shall run at Ranichauri.

Admissions to M.Tech. programme in (1) Design & Production Engineering, (2) Thermal Sciences, (3) Electrical Energy Systems; and (4) Soil Mechanics & Foundation Engineering, shall be made only if the number of candidates admitted is at least 5 in each of these programmes.

**O.S. Misra
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The Director

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Distance Education—Experience of Open Universities : A Report

Bakhshish Singh*

An International Seminar on 'Distance Education : Experience of Open Universities' was organised by the Indira Gandhi National Open University to mark its formal opening. Nine Vice-Chancellors/Pro - Vice Chancellors/Senior Academics from Open Universities in U.K., Canada, Japan, China, South Korea, Indonesia and Spain, and over 25 Vice-Chancellors/Professors from Universities in India and a number of eminent educationists participated in the Seminar.

Dr. (Mrs.) Madhuri R. Shah, Chairman, University Grants Commission, who delivered the keynote address commended need-based and non-examination entitlement courses, middle-level vocational courses as well as conventional degree and Master's level courses, with special emphasis on quality, mobility of students and audio-visual support. The motto of the Open University, she said, should be, 'Nothing but the best'.

There were, in all, eight Business Sessions during the three-day Seminar on :

- (i) Identification of Courses and preparation of Course material.
- (ii) Organisational structure of Open Universities.
- (iii) Role of media in distance education.
- (iv) Admission requirements and student profile.
- (v) Evaluation in distance education.
- (vi) New Education policy and role of distance education.
- (vii) Financing distance education.
- (viii) Assignments, contact programmes and student support services.

The delegates from Open Universities abroad responded to the various issues by narrating their experiences, the problems encountered and the solutions arrived at.

The thinking that emerged on various issues raised at this Session was as under :

Before identifying courses, the different types of Educational Programmes to be undertaken should be identified, such as, traditional education, adult education, vocational education; Levels of courses—non-degree, and credit and non-credit programmes, etc. For identifying courses under these categories, reports of various surveys already done could be useful. Some fresh surveys could also be undertaken to determine the

demands of various sectors of society and work-force not already covered by earlier surveys. We must also keep in mind national goals, Planning Commission reports, growth pattern, job potential. Employment Exchange registrations for different types of jobs, need of inservice training for different vocations and functional literacy needs of adults. Special attention would need to be paid to education of women, and backward sections of society to remove social imbalances. Consultations with various organisations, industries and Departments in the public as well as private sectors could be useful. General experience of educationists and educational administrators could also be a good guiding factor.

Regarding preparation of course material, the deliberations favoured some sort of team approach, though cost factor and differences of opinion could pose problems. The best academics, editors, educational methodologists, media and production experts should comprise the course teams. However, there should be no rigidity in this regard. If guidelines on format, content, style, etc. are prescribed, individual subject experts could also be entrusted with course writing work.

It was felt that some foundation or bridge courses for some sections of students should be provided to bring them up to the average standard. Try-out of course material on target groups could be useful. Various devices of feedback, in the form of self-check exercises and assignment questions should be built into the course-material.

Organisational Structure

Two significant types of structures emerged during the deliberations :

- (1) Centrally controlled structure on a nation-wide scale.
- (2) Independent Autonomous Institutions--having multiple parallel systems.

Under the first category such monolith systems are included which are largely government controlled with an elaborate network of sub-systems at provincial and local levels. In this system the centre is responsible for planning the courses and broadcasts telecasts to the whole country. The sub-systems at provincial levels are controlled by the central organisation with respect to the administrative and educational activities. The entire package is developed at central level, leaving

*Professor of Distance Education, Indira Gandhi National Open University, New Delhi.

scope for regional variations. In the same category are the systems which are autonomous in their governance and which assess their own needs and devise policies accordingly though in a centralised manner. Majority of the institutions fall under this category.

The other major category is where multiple systems operate at parallel levels. They are wholly autonomous in character, as in Canada, where more than one University, having open learning systems, are operating. The programmes or courses they float are not restricted by jurisdictional restrictions.

Both these categories of institutions have evolved structures which do not vary much from each other. They have bodies parallel to Councils, Senate, Academic Boards, Faculties though using different nomenclatures.

In so far as operational aspect is concerned three major divisions emerge within a system.

- (1) Educational or course production Division
- (2) Students Services or support services
- (3) General or Administrative Wings

Within these, different sub-structures emerge which vary according to the design of study adopted by the system.

All the Universities have developed a network of Regional Centres and Study Centres. These are extensively used mainly for providing additional information, face-to-face contact programmes and counselling. Largely the services of local agencies and personnel are obtained. These agencies are both public and private. In this context experience of Spain and a number of other countries is significant where such agencies provide the buildings, equipment, material and pay for the personnel employed. In Korea, this cooperation is sought at the level of sub-local study-centres wherein teaching staff for the University and cooperating institutions come together to provide services to the students.

Role of Media Distance Education

In this session foreign delegates gave interesting account of their experiences with the Media. In China, printed materials, radio and TV were all used in distance education. The Chinese use TV for nation-wide programme viewed by large audiences. In specialised courses, TV was not used since such courses catered to small audiences. The use of TV also depended upon the subject matter to be handled. In China, printed materials are the cheapest. TV is very expensive. However, students like TV the most. Students are generally not used to self-study. They prefer teacher-centred study. Efforts are being made to encourage self-study among distance education students. TV programmes

cover 50% in science and engineering courses, but hardly 20% in arts and social sciences.

In Korea, both radio and TV are used in distance education programmes. Radio broadcasts, however, are not properly aligned with students' free hours and hence there is a preference for audio-cassettes. Video-cassettes are also produced by the Open University. Viewing and listening facilities are available at the study centres.

In Spain, radio and print materials are the principal media of communication. Audio-cassettes are made available at the study centres. TV is considered prohibitively expensive. In the total delivery system, print material covers 80% and radio 20%.

In Japan, heavy reliance is placed on TV and Radio. Audio-cassettes are also used very liberally. 77% of the students have video-cassettes and 99% have audio-cassettes. Televised courses are supplemented by print materials and contact programmes. 56% of the delivery system comprises TV and radio broadcasts.

In U.K., Television programme of the Open University is a very great attraction. National TV programme is effectively used in distance education. However, students consider video-cassettes more useful than TV.

In Canada, telephone is used besides Radio and TV for distance education. Telephone occupies a weightage of 30% in the delivery system, radio 10%, TV 15% and print materials 45%. TV programmes are very successful. Satellite transmission is considered very cost effective.

In India, so far, only 6 institutes out of 30 arrange radio talks for their students. TV support is not at all available. However, some educational programmes are relayed from TV centres but these are not student-based; they are of a very general nature. The need for TV support for distance education instruction, however, is being strongly felt. Socio-economic profile of distance education students rules out the possibility of purchase of audio or video-cassettes by them in the near future. Community TV viewing and community or even individualised listening are the only means that can help the effectiveness of the Media. The participants of the Space Application Centre from Ahmedabad contended that TV costs are not very high in India. The Centre, it was pointed out, has developed low cost television equipment. We must go in for LITTLE MEDIA, rather than think in terms of elaborate and expensive TV studios.

However, TV transmission should be decentralised and each place should have a low cost studio facility. With the commissioning of INSAT-1C, it would be possible to have a separate channel for educational broadcasts.

TV software can be prepared very cheaply in India if academics are trained in handling TV cameras and other supporting equipments.

A question was raised about the sensitivity of Government controlled TV and Radio to programmes in social sciences and it was felt that Open Universities should have autonomous and separate Radio/TV channels.

Admission Requirements

It was emphasised that the basic consideration governing admissions in the open universities should be to provide education to all those who can benefit, with special emphasis in favour of working people, house-wives, dropouts of the formal system and other disadvantaged sections of society.

True to their objectives, the Admission Requirements in Open Universities are far more liberal than those obtaining in the Conventional Systems. In some of the countries like U.K., minimum age is the only limiting factor. The minimum age requirement varies from 18 years to 21 years. There are some other countries where minimum age has not been specifically prescribed but students have to attain a minimum qualification before seeking entry. In Indonesia, Japan and China they should have passed the High School or equivalent examination. These countries also accommodate the *spill-over of Entrance Examinations held for entry into Conventional Universities.*

In a number of countries the demand for the Open Learning System is overwhelming. In Spain, within a decade, the enrolment has increased from roughly 11,000 to 87,000. In China, on the other hand, nearly one million students have registered with the CRTV. Some sort of screening procedures too have been devised by these systems. In China, the students have to be sponsored by their employing agencies while in Korea they are admitted on the basis of performance in the qualifying examination. In the United Kingdom the students are admitted on first come first serve basis, though, admissions are regulated, if necessary, to have proper regional balances. The need for regional balancing perhaps may also arise in the case of Indira Gandhi National Open University, particularly in view of the limited choice of medium of instruction i.e. English, Hindi, as has been the experience of Open School operating in Delhi in similar circumstances.

Average age of the beneficiaries ranges between 22 years to 28 years. Majority of the Distance Education students in advanced countries are employed. In developing countries this ratio is much lower with the exception of China where 90% of the students are employed whether taking full time or part time courses.

The most exhilarating feature of Open Learning Systems is that it has come as a great boon for the

physically handicapped persons. The Open University in U.K. has more disabled persons as its students than all the disabled persons put together in conventional Universities. Open School in India too is having an increasing number of disabled students, particularly because they are exempted from Tuition and other fees.

Evaluation in Distance Education

This session discussed the areas of Student Evaluation as well as Institutional Evaluation.

Most open universities follow a combination of classical mode and computer marked systems. Overall evaluation of students is done on the basis of continuous assessment and examinations. Evaluation can, however, vary according to delivery system used. The major formats used are projects, traditional examinations, self-assessment and computer assisted learning question banks. The role of tutors is fairly strong though variable.

The institutional assessment is done through efficiency study carried out by outsiders and response of 'customers'. It was emphasized that an open university should, from the very beginning, set evaluation standards in a manner which would establish the credibility and confidence in its evaluation system. The Open Universities should avoid pitfalls of the evaluation system of conventional universities.

New Education Policy & Role of Distance Education

The papers presented at the session and the discussion that followed indicated that distance education has already emerged as a viable system for higher, adult and continuing education. But the conventional and distance education systems should operate in a mutually supportive role. The following points were emphasized :

- (1) Materials should be standardised for all distance education.
- (2) Focus should shift to vocational education.
- (3) Open University should tackle the problem of teacher obsolescence.
- (4) Open University should take over the load of ever-increasing numbers at undergraduate level in arts, commerce and general science classes.

The Union Minister for Human Resource Development, Mr. P.V. Narasimha Rao, who also attended this Session said that the exploratory stage of Indira Gandhi National Open University should be exciting, even though controversial. The University should benefit from the experience of open universities in other countries, with due attention to our special needs. The open university and traditional universities should be complementary to each other but innovation must find a special place in the open university. He recommended recruitment of teachers on deputation or contractual basis

with certain incentives to attract good teachers. There is tremendous expectation from an open university. The areas of teacher education, vocational education and in-service training courses should be considered as priority areas. Collaboration with private sector organisations for training/retraining workers should be seriously pursued.

Financing Distance Education

This session was marked by useful information furnished by delegates from abroad about their open universities : In Indonesia, three sources of financing were available; student tuition fees, State grants and assistance from foreign agencies. Contribution of fee component was 33% and 66% was contributed by the State and foreign agencies.

In Spain, contribution of the Ministry of Education was 46%; student fees accounted for 47% and sale of books contributed about 7% of the total costs. Besides this, provincial governments and banks bore the cost of running Study Centres. A student paid \$ 240 a year as fee. However, printed material is purchased by the student on a personal basis.

In U.K., fee component constituted 15% of total costs and State contribution was 85%. However, in non-degree programmes, fee component was two-third and special grants provided one-third. Costs were 25% higher in science courses than in arts and social science courses.

In China, there are two categories of students : Registered and previewers. Registered students are not required to pay fees but previewers are required to pay fees. Since previewers are generally unemployed, their parents pay the fees which are of the order of \$ 200 for 3 years. Students cannot afford to pay for video-tapes, but audio-cassettes are very common. A German World Bank loan was used to equip 85 Study Centres, to set up 9 transmitters in 9 big cities, as also to equip laboratories and libraries. Pressures from society on TV University is very high. Since the authorities think that distance education is very cheap, there is a high degree of reluctance to provide adequate financial support.

In Canada, State Grants account for 75 to 80% and tuition fees 10%. The remaining 10 to 15% is provided by entrepreneurial or business activity by the University. Continuing education programmes are revenue generating. Research projects for the Government and private-sector are also used for revenue raising. Private sector too can contribute funds to Open Universities. The Government gives matching grant to the contributions made by the private sector.

In Korea, State contribution was 60% and student fees accounted for 40%. No financial support was received from International Organisations. Adequate

funds were not available for Agriculture, Computer Science and Physical Sciences programmes to up set laboratories.

In Japan, tuition fees account for 15% of the cost. Rest was contributed by the Government. A student pays 3,000 Yen per year which includes cost of course materials. Scholarships, though available are not applied for by the students, because large number of students are employees or housewives and are not eligible for scholarships. For capital costs, block grants on a 5-year basis are made available; for maintenance costs, grants are available on an annual basis. The basis of grants is the number of courses and the number of faculty members. In U.K., however, number of students and number of courses was the basis for negotiation of grants from the State. In Canada, block grants were provided. The institution has the freedom of allocation to capital expenditure or maintenance expenditure.

In India also the thinking at Central and State Government levels as also at the university level is that correspondence courses should be self-financing. This has done great damage to the development of distance education in the country. Whereas the State subsidises to the extent of 91% in regular Colleges and Universities, and the student pays only 9 per cent in the form of tuition fees, the degree of State support is totally absent in some distance education units and is inadequate in others. Better quality of distance education will require better human and physical infrastructure to operate the system and for this adequate financial support is necessary.

Assignments, Contact Programmes and Student Support Services

The consensus in this session was in favour of regular submission and evaluation of student assignments, careful grading and quick turn around. Short face-to-face teaching sessions or contact programmes were generally favoured by the students. It was strongly felt that well-organised Student Services should be a must for the Open Universities and distance education institutions.

The concluding Session on 22nd November, 1985 was chaired by the Minister of State for Education and Culture, (Mrs.) Sushila Rohatgi. The Minister of State for Information and Broadcasting, Shri V. N. Gadgil, delivered the valedictory address. Mrs. Sushila Rohatgi emphasised the need for radio and television support to Indira Gandhi National Open University. Shri Gadgil agreed on this but did not see much scope in the near future for providing adequate TV support because of various limitations.

The Seminar concluded on a note of mutual appreciation and possibilities of close collaboration among the Open Universities all over the world.

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Need for Training Programmes for the Administrative Staff in Universities and Colleges

V. Natarajan*
K. Gunasekaran**

Examination system has come to be regarded akin to an industrial system in its complexities in our country. From a mere enrolment of 3,96,745 students spread over 695 colleges and 27 universities in 1950-51, the corresponding figures in 1982-83 are 31,36,986 students, 5,012 colleges and 133 universities (Saraf, 1985). Since the number of students enrolled in the various colleges have phenomenally increased over the years one would naturally expect that the procedures followed by the Examination Sections of the universities would also have undergone some radical changes. (As this article focuses its attention on the Examination system, the other systems, viz., Academic, Administration and Finance are not discussed.) But, the position is that even today the universities continue to adopt the same old procedures that they were adopting previously when the number of students were comparatively less. The pressure on the Examination System was all the more increased when some universities switched over to the Semester system from the age-old annual system. Under the Semester system each academic year was divided equally to give birth to two semesters of six months duration each. The result was that the universities had to conduct examinations twice in a year in addition to the supplementary examinations. This has considerably increased the work-load on the examination system in a university. In many universities the results of an examination could not be announced before the students sit for the next examination, leave alone when they join for the next semester/year. Never before the situation was so alarming. In the meanwhile the University Grants Commission sent circulars to the universities to restructure their courses to suit the social needs of the regions in which the colleges/universities are situated. In pursuance of this direction, many universities had restructured their courses. In the changed situation, there were many courses that were offered by the colleges/universities. This factor also contributed to some extent the virtual crackdown of the Examination System in some of the universities. Needless to say that some of the progressive measures introduced by some universities like

provision for revaluation of university examination answer scripts and the provision made available for the students to reappear again in the paper(s) in which they had already passed are finding it difficult to withstand the pressures from the Examination Sections of the universities. It is just a matter of days/months before they are also withdrawn with giving a stamp that 'the reform is unsuitable for the Indian soil.' It may be mentioned here that the magnitude of this problem varies from one university to another. But, every university suffers from this malady. An analysis of the situation leading to the present state of affairs reveals that the defect lies in the procedures followed by the examination section of a university, as it has not kept pace with the increasing enrolment of students and the complexities introduced in the Regulations/Syllabi. Some universities have resorted to computerisation of their examination results in the hope of cleaning the Augean stable—while there may be short-term achievements, the problem is left unsolved on a long-term basis. But in fact they were tinkering with the system without identifying the root causes for the present sad state of affairs. As the timely declaration of the results that are free from errors determine the *credibility* of a University in the eyes of the students, parents and the public in general, it is pertinent to ponder over the possible solution of this deep malady.

Before the solutions to tackle the problems are discussed, it will not be out of place to examine the administrative structure in the Universities. While the Registrar is the administrative head, the Controller of Examinations manages the whole show regarding the conduct of Examinations, issuing of certificate and a host of other related activities. Under him, in most of the universities, the structure has been built up somewhat like this: Deputy Registrar/Deputy Controller of Examinations, Assistant Registrar, Section Officer, Superintendent, Assistants / Upper Division Clerks and Lower Division Clerks. In many universities, a person who joins as Lower Division Clerk may rise to the position of Controller of Examination by virtue of his service. In some universities, for the post of Controller of Examination (COE) an academic person drawn from a college/university department

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is posted. This is presumably done so that COE will be able to (a) effectively interact with the academic community and (b) understand the complexities of the regulations and will be in a better position to operate the system. Of late, in many universities, persons drawn from Indian Administrative Service are posted as COEs. Whatever be their background each COE operates the system in his own way in the absence of any standard set procedures to operate the system right from the receipt of application form from the students to the last activity of sending Provisional Certificate/Diploma. Hence, if one University is publishing the examination results on time then the credit should go to the concerned Controller of Examinations for his ingenuity in operating the system. To put it in a nut-shell the whole system revolves round an individual viz., COE and the process has not been institutionalised. The best way to achieve it is through training. Here it may be observed that in most of the universities no formal training is given to its administrative staff involved in the management of Examinations right from the lower division clerk to COE. At present, training, if any, in the administrative procedures including that of examination system is largely left to the good-will of the seniors working in the universities. It is high time that this kind of slip-shod method of transfer of knowledge is replaced by a formalised training programme for the administrative staff of the universities. At a time when modern management techniques and procedures are adopted in all fields, educational institutions should be no exception. The Management of Examinations calls for a *professional approach*.

Recently, the UGC has written to various universities to implement some minimum Examination Reform programmes. Understandably, to lend teeth to its plea to the Universities it has linked the grants to be made available to the universities under quality improvement programmes with the implementation of the minimal examination reform programmes. This will result in increased activity in this area in the near future which will have its direct impact, *inter-alia*, on the examination section of a university. Unless the personnel of the examination section are given adequate training in the procedures involved, in all probability the reforms will fail to take roots. As the administrative staff in the universities is transferable from one section to another, training programme designed should be broad-based to cover all aspects of university administration.

In this connection, two points are to be considered. First, who will take-up responsibility to train the staff? and the second, upto which cadre the training has to

be imparted? Before answering the above questions, let us survey the present institutions which are undertaking these types of programmes in one way or the other. It is observed that only two institutions are doing this type of programmes. They are : National Institute of Educational Planning and Administration (NIEPA) at New Delhi and Administrative Staff College of India (ASCI) at Hyderabad. The Research Cell of the Association of Indian Universities, New Delhi has organised a series of Workshops on "Computerisation and Management of Examinations" in different parts of the country in which the COE/Dy. COE/Dy. Registrar/Officer-incharge of Exams. participated. In these Workshops the participants discussed the related issues and came out with a series of recommendations. However, there is a strong need for establishing a training centre exclusively for training the administrative staff members in the universities and it may be called as University Staff College (USC). As of today, more than 104 traditional universities are in India excluding Agricultural Universities, IITs and Deemed Universities (AIU 1984). In addition to the administrative staff of the various universities, USC can also undertake training programmes relevant to college Principals/University Heads of Departments. To answer the second question raised earlier, the training should cover all the staff members in a university in a phased manner. Taking 1,000 employees in a university, the number of people to be covered through the training programme comes to 1,04,000. Every State in the country on an average has 4 universities and if we take into account the number of administrative staff working in the universities, affiliated colleges and in the University Departments as heads, the number to be trained is large. Hence, every state can think of establishing a training centre. Whether they utilise the present manpower in different organisations or create a new organisation as per the above suggestion it hardly matters. But it should be noted that the training for the administrative staff is no more a luxury but has become a necessity for the efficient functioning of the universities.

As the management of a University has become a complex affair, the Government of India may also think of reviving the Indian Education Service (IES) so that persons with adequate training are posted in the Universities to administer them. To some extent this will greatly help the universities to come out of their woods. Ironically, except in the field of education, in every other field the newcomers are given some sort of a training and it is high time that the State Government and the Government of India take up this matter seriously and act with utmost priority. It is already late but better late than never! □

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Seminar on Research Methodology at Bombay University

University of Bombay organised in its Department of Law a seminar on Research Methodology on 18 January 1986 for the benefit of the Ph.D. scholars and faculty to prop up research activities in the Department. Professor J.K. Mittal of the Indian Law Institute, New Delhi, who delivered the key-note address, emphasised that the legal process is a social process and the importance of research in Law cannot be underscored because law sets the norm for the betterment of social process. Research must be socially relevant and the objective must be to bring about solutions to the problems in the society. The researcher must conduct field work and atleast one chapter in his thesis should be based on the field work done. The objectives set out under the Directive Principles of the State Policy should inspire the researcher to conduct empirical studies in addition to doctrinal research, he said. The empirical research should be systematically conducted and the results so codified that they provide scope for law and development. The development, he observed, also referred to cultural and economic aspects.

Principal Sandanshiv pointed out that the student plays an important role and thereafter comes the role of Guide and then the socially relevant research. The success of research must be primary, secondary and allied. The researcher should work hard for the research of the truth in the field of Law.

Dr. (Mrs) Narmada Khodie, who directed the seminar, pointed out that research is the pure blessing that one can enjoy in this complex world and get used to this joy of creation. Research is a continuing

phenomenon and the horizons of knowledge are ever expanding.

Following recommendations emerged at the Seminar :

- (i) the research thesis should not be for decorating the arcades or libraries, but should be published and the suggestions should be made known to the authorities concerned so that they can be examined and implemented whenever possible ;
- (ii) the researcher should peep into the future and try to envisage the new social patterns and factors vis-a-vis Law ;
- (iii) there is a dearth of research in the field of international commercial law, economic law, impact of science and technology and allied subjects ; and
- (iv) more finance should be available for conducting specially empirical research.

Science Education Conference at AMU

A three-day conference on "Science education in the country with special reference to Indian Muslims" was organised by the Centre for Promotion of Science, Aligarh Muslim University.

Inaugurating the conference, Nobel Laureate Professor Abdus Salam urged the Muslim leaders to introduce science courses at primary and secondary levels in religious institutions to promote science in India. He observed that the Muslim religious leaders had not made enough efforts in the past to encourage students to acquire scientific and technological knowledge.

Referring to scientific progress

in the Muslim World, Prof. Abdus Salam said that the present enrolment in scientific and technological education in the age group of 18-23 years at the Universities, the Muslim World average two percent of the relevant age group compared to the norms of around twelve percent for the developed countries. A figure of around 45,000 research and development scientists and engineers was given for the entire Islamic World, compared to one and a half million in the USSR and four hundred thousand in Japan.

He emphasised the need for a talent fund for science which should encourage young Muslims to pursue scientific and technological studies from the age of fourteen upwards and urged that concrete steps should be taken to promote science in Muslim societies.

Prof. Salam observed that science is fundamental to Islamic thinking. There are more than 750 verses in the Holy Quran pertaining to science and allied subjects in which believers have been exhorted to examine nature and seek more and more knowledge.

Prof. Salam announced a cash prize of one thousand dollars for the best science student at A.M.U. every year. Another prize was announced by the Tehzeebul Akhlaq Trust for the best science article in Urdu. The Hamdard Foundation also announced a prize to be awarded every year to the best medical science student at A.M.U.

The inaugural function was presided over by the Chancellor, Prof. A.R. Kidwai and a large number of eminent educationists and scientists from all over the country attended the conference.

Professor Istar Ahmad, Director of the Centre for Promotion of

Science (CPS) presented a programme to be undertaken by the CPS to improve the quality of science education in Muslim Managed Educational Institutions and promote science in the Indian Muslim Community.

It was repeatedly emphasized during the course of the conference that the CPS through its various programmes must make special efforts to (i) educate Indian Muslim parents to encourage their girls to opt for science subjects, (ii) motivate Muslim Waqfs to financially help Muslim managed colleges and schools including Deeni Madarsas in strengthening their science teaching programmes, and (iii) encourage setting up of voluntary regional organisations throughout the country for promotion of science.

Hindi fiction by women writers

A UGC sponsored seminar on contemporary Hindi fiction by women writers was organised by the Smt. B. M. Ruja Mahila Mahavidyalaya, a Hindi medium college affiliated to the SNDT Women's University. Inaugurating the seminar Dr. (Smt.) Neera Desai, officiating Vice-Chancellor, SNDT Women's University, made a critical analysis of literature by women from the sociological point of view. She stressed the role of women as decision makers and creative writers and emphasised the changing values of women.

The following topics were discussed at the Seminar:

- (i) Philosophy and development of Hindi fiction by various women writers.
- (ii) Problems of women and new directions.
- (iii) Analysis of areas covered in fiction writing by women writers.

(iv) Critical evaluation of works of various women writers.

(v) Value development through writings.

The Seminar, made the following recommendation :

- (i) The contents of Hindi Fiction should be such that one could allow it to reach the hands of young adolescents without any reservations.
- (ii) As our life consists of Satyam, Shivam and Sundram (सत्यम्, शिवम्, सुंदरम्) - the same should be reflected in Hindi Fiction. To-day's Hindi Fiction seems to be preoccupied with the darker aspect of life in the name of reality. But reality has darker as well as brighter aspects of life. Hence, the brighter aspect of life too should be included in contemporary Hindi Fiction.

An exhibition of posters and charts related to contemporary Hindi fiction was also organised on the occasion.

JNU confers honorary degree on Greece Prime Minister

The Jawaharlal Nehru University conferred an honorary Degree of Doctor of Letters (Honoris Causa) on the Prime Minister of the Republic of Greece, Professor Andreas George Papandreou at a Special Convocation held on the 28th January, 1986. The degree has been conferred as a token of appreciation of his invaluable contributions to knowledge, to the cause of world peace and towards the efforts for ushering in a better world for our future generations.

A seminar on 'Biology of Fungi' was held on the occasion of 13th Annual Meeting of the Mycological Society of India at the University of Poona from 3rd-6th December, 1985. Prof. V.G. Bhide, Vice-Chancellor, University of Poona inaugurated the seminar. Prof. S.D. Patil was unanimously elected as President of the Mycological Society of India for 1986.

Prof. C.V. Subramanian, former President and the founder member of the Mycological Society of India, who delivered the keynote address, emphasized the importance of fungi in human affairs. He stressed the need to look into various stages of fungi from the utilitarian point of view.

The effect of mycotoxins on human health was discussed by Prof. K.S. Bilgrami of Bhagalpur University. Mycotoxins are elaborated on a wide range of food materials and are responsible for inciting mycotoxicoses in man and warm blooded animals. Important mycotoxins aflatoxins, sterigmatocystin, ochratoxins, citinin, Zearalenone and trichothecenes are produced by *Aspergillus*, *Penicillium* & *Fusarium*. Practically no edible substance is free from fungal invasion and subsequent mycotoxin elaboration.

Prof. K.S.M. Sastry of the Regional Research Laboratory, Jammu, spoke of the utilization of ergot alkaloids in pharmaceuticals. Ergot is one of the most ancient drugs of microbial origin used in a number of pharmaceutical preparations. Till recently, the entire requirement of this crude drug and its preparation were met by importing it to the tune of Rs. 50-60 lakhs every year. Biotechnology developed at R.R.L. Jammu, has aided in

meeting the requirement of our country which is about 15-20 tonnes per annum.

Dr. M. C. Srinivasan of the National Chemical Laboratory discussed the importance of germplasm conservation in biotechnology.

The seminar had five sessions, namely,

(i) Taxonomy, (ii) Ecology, (iii) Environmental Mycology (Soil), (iv) Environmental Mycology (Air), (v) Biotechnology; and (vi) Plant and Animal Mycology at which about 50 papers were presented. An exhibition of 20 posters belonging to the above sessions was also organised on the occasion.

AMU Instt. of Biotechnology

Noble Laureate Prof. Abdus Salam laid the foundation stone of the Institute of Bio-technology at the Aligarh Muslim University. Speaking on the occasion, Prof. Salam lauded the role of A.M.U. in promoting scientific and technological education in India and added that the objective of the Institute is to promote excellence in Biological research.

Prof. Salabuddin, Director, Institute of Bio-technology said that A.M.U. had already started post-graduate courses in Bio-technology last year. The Institute was likely to be completed in two years at a cost of Rs. 3 crores. He said that the Institute would be the first of its kind in the country offering training in tissue culture, bio-conversion, immunology, computational methods and micro-biology.

In his presidential address, Prof. A.R. Kidwai said sophisticated instruments and equipments were being imported for the institute. It

also provided facilities for research in frontier areas of Bio-technology.

More central assistance for Cochin University

Cochin University is one of the four Universities selected by the Government of India for training computer software experts to meet the large manpower requirements in this field. The other three Universities are Pune, Jadavpur and Andhra. According to the proposal, the University will offer a 2-year post-graduate programme in computer software. First-class graduates in Mathematics and Physics will be eligible for admission. Admission to the 50 seats will be based on an entrance test and interview. All selected candidates will get a scholarship of Rs. 800/- per month with a job guarantee on the successful completion of the course. In addition, the Government of India will provide funds to the University to the tune of Rs. 40 lakhs over a 5-year period to run the programme. The University is planning to start the programme in the forthcoming academic year itself.

The University Grants Commission has also identified the University's Department of Physics for special assistance. This is in recognition of the academic and research attainments of the Department. An Expert Committee will visit the University shortly and assess the quantum of special assistance that would be provided for further strengthening the Department of Physics.

School of Marine Sciences of the University is already receiving special assistance from the UGC, the amount so far allocated being Rs. 27 lakhs.

The Ministry of Human Resource Development has also sanctioned to the University an amount of Rs. 15

lakhs under its scheme of 'Direct Central Assistance' for the modernisation and expansion of laboratory facilities in Laser Technology and Opto-electronics. This is in addition to Rs. 64 lakhs already released by the Ministry for the creation of infrastructural facilities in emerging areas such as microprocessors, electronic instrumentation and computer information sciences.

National Award for PAU cassette

A special prize was awarded to the pre-recorded audio tape cassette produced by the Punjab Agricultural University on wheat cultivation at the National Agricultural Information Communication Workshop held at Madurai (Tamil Nadu) by the Union Ministry of Agriculture and Rural Development.

This cassette which was produced by Mr. Amritjit Singh Grewal, an Editor in the Communication Centre of the Punjab Agricultural University, was very well received by the farmers of the State during the last Kisan Mela when it was formally released by Dr. Sukhdev Singh, Vice-Chancellor of PAU.

This cassette contains cultivation and after care tips along with folk music in respect of wheat. More cassettes on the cultivation of Rice, Sugarcane and cotton are being produced which will be available at the Kisan Mela this year.

Correction

The article "Teaching Through Discussion Method in Higher Education Classes" published in our issue of January 16, 1985 was authored by Dr. Sucha M. Joshi and not Shriendra Joshi as erroneously given there. The error is deeply regretted.

INSAT-1B Programme of UGC

Between 17th and 28th February, 1986 the following schedule of telecast on higher education through INSAT-1B under the auspices of the University Grants Commission will be observed. The programme is of one hour duration every day from 12.45 p.m. to 1.45 p.m. (Repeated from 4 p.m. to 5 p.m.) and will be available on the TV network throughout the country. For the viewers in Delhi and surrounding areas these programmes can be seen on the second channel.

17.2.86

“Field Geology : Aman”
“Hydrotechnical Research in Energy”
“Silver”

18.2.86

“From Snowdon to Sea”
“Fog Identification”
“Flower”

19.2.86

“Biology : Form & Function”
“Vacuum-II”
“Gasohol”

20.2.86

“Life on the Seashore”
“Animal in the Camera Lens—The Reindeer”
“Vacuum-II”

21.2.86

“Cell Structure”
“Dr. Agharkar—Who Sprouted Botany”
“Science World”

22.2.86

“Membranes”
“Living with Birds”
“Science World”

23.2.86

No Telecast (Sunday)

24.2.86

“Enzymes”
“Physics of Clouds”
“Exploring Space”

25.2.86

“Allostery”
“12 Hrs. of Hope”
“Science Magazine”

26.2.86

“Metabolic Pathways”
“Mushrooms”
“Pearl Culture”

27.2.86

“The Rod Cell”
“Energy”

28.2.86

“What is Development”
“Multi-Storeyed Cropping”
“Multimeter”

Sports NEWS

Guru Ghasidas East Zone Hockey Winner

Guru Ghasidas University won the Inter-University Hockey (M) for East Zone organised by AIU through Guru Ghasidas University at Bilaspur in the first fortnight of January 1986 in which 16 Universities participated. Ravi Shankar University won the second position. Ranchi and Manipur University were placed 3rd & 4th respectively.

The tournament was played on league basis from the Semi-Final stage. The detailed score of the league matches is as follows:

University	Mat- ches played	Mat- ches won	Drawn	Lost	Goal For	Goal Against	Points	Plac- ing
1. Guru Ghasidas, Bilaspur	3	2	1	—	8	2	5	I
2. Ravishankar, Raipur	3	1	2	—	5	3	4	II
3. Ranchi	3	1	1	1	5	5	3	III
4. Manipur	3	—	—	3	0	8	0	IV

Arjuna Award Winners for 1983 & 1984

The Government of India instituted Arjuna Awards in 1961, as a recognition of achieving excellence in the field of sports. Apart from performance, the awardee should also show qualities of leadership, sportsmanship and a high sense of discipline. For the years 1983 and 1984, the President of India, at a special investiture held at Rashtrapati Bhawan on January 22, 1986 awarded the Arjuna Awards to the following sports-persons:

1983 :

P T Usha and Capt Suresh Yadav (Athletics), Subhash B Agrawal (Billiards & Snooker), Suman Sharma

1984 :

Shiny Abraham and Raj Kumar (Athletics), D Raja-raman (Ball Badminton),

and Radhey Shyam (Basketball), Jas Lal Pradhan (Boxing), Dibyendu Barua (Chess), Diana Edulji (Cricket-W), Armin R Arethna (Cycling), Shanti Mullick (Football-W), Zafar Iqbal (Hockey), Maya Kasinath (Kabaddi), Veena Narayan Parab (Kho-Kho), Lt. Col. R S Sodhi (Polo), Maj Pravin Kumar Uberoi (Rowing), Mohinder Lal (Shooting), Anita Sood (Swimming), Rama Krishna Purohit (Volleyball), Vispi K. Daroga (Weightlifting).

Pravin Mahadeo Thipsay (Chess), Ravi Shastri (Cricket), Capt. Gulam Mohammed Khan (Equestrian), Rajbir Kaur (Hockey-W), S Prakash (Kho-Kho), P J Joseph (Power Lifting), Capt. Mohammed Amin Khan (Rowing), Om B. Agrawal (Billiards & Snooker), Khazan Singh (Swimming), Saly Joseph (Volleyball), Col Darshan Kumar Khullar and Bachendri Pal (Mountaineering).

GNDU wins MAKA Trophy

Guru Nanak Dev University has won the Maulana Abul Kalam Azad Trophy for the year 1983-84 securing 739 points. Delhi University won

CALENDAR OF EVENTS

Proposed Dates of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/Officer to be contacted
February 13-14, 1986	National Seminar on Mussel Watch	Technology of Pollution Monitoring in Coastal and Nearshore waters	School of Marine Sciences, University of Cochin, Cochin	Prof. N. R. Menon, Organising Secretary School of Marine Sciences, University of Cochin, Cochin.
February 16-20, 1986	Tenth International Congress of the Federation Internationale de la Precontrainte (FIP)	To provide a forum for exchanging ideas and discussing new and innovative practices in structural concrete across the world	The Institution of Engineers (India), Bahadur Shah Zafar Marg, New Delhi	The Organising Secretary, FIP 86, C/o Institution of Engineers (India), Bahadur Shah Zafar Marg, New Delhi
February 20-22, 1986	Second Cuban Seminar on Interferon and First Seminar on Biotechnology	To promote fruitful exchange of experiences on these subjects	Iberian-Latin-American Society for Interferon and the Cuban Committee on Biotechnology	The President, Organising Committee, Seminario Interferony Biotecnologia, P. O. Box 6072, Havana, Cuba
February 24-28, 1986	Short-Term course on Application of Remote Sensing to Mineral Exploration	To acquaint the participants with the techniques of Image Processing and Digital Analysis of Landsat Data.	Centre of Studies in Resources Engineering, IIT, Bombay	Dr. T.V. Payare, Chief Project Engineer, Remote Sensing Division, CSRE, IIT, Bombay
February 24-28, 1986	International Symposium on the Role of Universities in Wildlife Education and Research	To recommend the start of Life Science Teaching and Research on modern scientific lines in the Indian Universities	Department of Zoology, Aligarh Muslim University, Aligarh	Dr. A. H. Musavi, Director

the second position with 447 points and Bombay University was adjudged third with 270 points. The University has won this coveted award for the 6th year in succession i.e. for the years 1978-79, 1979-80, 1980-81, 1981-82, 1982-83, and 1983-84.

The trophy was instituted by the then Ministry of Education in the year 1956-57 to arouse interest in sports in the university sector. Originally the criteria for the award was very simple, it was based on only one factor i.e. the strength of sports persons contributed by a University to the national teams participating in the international competitions. The criteria, however, was laid down in 1967, on the recommendation of a Sub-Committee constituted by the then All India Council of Sports. The following is the revised criteria :

(i) Performance and participation in approved International Competitions.

- (ii) Performance in National Championships.
- (iii) Performance in Inter-University Tournaments.
- (iv) Development of sports activities at the University Level.

AIU recommends more NIC Field Stations

National Institute of Sports (NIS) has instituted a scheme of Field Stations to provide coaching facilities to the universities. Under this scheme, universities provide infrastructure facilities and equipment, and the NIS provides the coaches. So far 33 Field Stations have been set up at various university centres. AIU has recommended that 13 more NIS Field Stations be established during 1986-87 at the universities of Bhavnagar, Burdwan, Guru Ghasidas, Indian School of Mines, Marathwada, Banasthali Vidyapith, Berhampur, Bombay, Gulbarga, Dr. Hari Singh Gour Vishwavidyalaya, Kakatiya, M.L. Sukhadia, Nagpur and Berhampur.

from different parts of the country attended the Seminar.

Sri Kripa Narain, Vice-Chancellor of the Pantnagar University who inaugurated the seminar urged the participants to develop a communication link between the states of the country and within the state from one village to another, in order to make agricultural communication an effective tool of farmers' development.

He emphasized that appropriate farm technology should be taken over to the farmers with appropriate, efficient communication techniques. As a first step towards this, it is essential to understand our farmers, determine their needs and devise communication strategy for effective transfer of technology. Both simple and sophisticated technologies be used and for this central concern should be on developing effective and reliable low cost recent technologies as computer, satellite, video, T.V. etc. alongwith use of folk and traditional media. Suitable techniques for small and marginal farmers and for tribals and hills farmers should also be developed, he said.

News from Agril. Varsities

Agricultural Communication Seminar at Pantnagar

A three-day National Seminar on Agricultural Communication has been organised at G.B. Pant University of Agriculture and Technology, Pantnagar.

About 50 communication experts and practitioners from Doordarshan, AIR, Indian Institute of Mass Communication, Jamia Millia, Council for Social Development, ISRO

and scientists from Agricultural Universities and ICAR Institutions

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E.S. 5 SECTION

PORUGAL GOVERNMENT SCHOLARSHIPS 1986 87

Applications on plain paper, as per prescribed format, are invited from Indian Nationals, for the award of two scholarships, offered by the Government of Portugal. The salient features of the offer are as under :

SUBJECT-FIELDS : (i) Study in Portuguese Culture ; (ii) Research in History pertaining to the period of Portuguese in India; and (iii) Study in Portuguese in language.

QUALIFICATIONS : Uniformly good academic record with Master's degree in History with knowledge of Portuguese language for studies in Culture/History and diploma of proficiency in Portuguese for study of Portuguese language.

EXPERIENCE : Preferably two years' teaching/practical training/research experience as on 1.10.1985 after the prescribed qualifications. Candidates already registered for Ph.D. in an Indian University will be given preference.

LEVEL OF STUDY : Ph.D. level research/training.

DURATION : One academic year commencing from October, 1986.

VALUE : 48,000 pesetas p.m.

AGE LIMIT : Not exceeding 33 years as on 1.10.1985 (Relaxation in age upto two years will be given in the case of SC/ST candidates).

LAST DATE FOR RECEIPT OF APPLICATIONS is : 28.2.1986.

PASSAGE COST : Passage cost from India to Portugal and back will be borne by the candidates or his/her employer/sponsor. Subject to the availability of funds, the passage cost may be met by the Government of India in accordance with the rules of eligibility etc.

NOTE :--The following must be attached with the application :

- (a) Attested copy of the certificate certifying the date of birth.
- (b) Candidates belonging to SC/ST must attach a copy of certificate.
- (c) Attested copies of all degrees/diplomas/certificates, etc.
- (d) Attested copies of marks sheets of the qualifying examination.
- (e) Candidates must furnish a clear and precise programme of study/research in Portugal.
- (f) A recent passport size photograph of candidate must be affixed on the prescribed application form; and
- (g) A crossed postal order of Rs. 5.00 and (Rs. 1.25 p. in case of SC/ST & other backward classes) payable to the Secretary, Ministry of Human Resource Development, Shastri Bhavan, New Delhi.

2. Application in the subject-fields other than those specified above will not be considered.
3. Candidates who have already been abroad for study/specialisation/training either on a scholarship or on their own are eligible to apply if they have been in India for at least three consecutive years after their return from abroad ; 4. Applications of candidates who are at present abroad will not be considered. 5. Equivalent foreign degree will be considered. 6. Candidates should have adequate knowledge of geographical situation and cultural heritage of India, and of the donor country. 7. Applications which do not contain postal orders and other required documents will be treated incomplete and will not be considered. 8. Candidates who do not possess the requisite qualification need not apply. 9. Applications received late will not be considered.

FORMAT OF APPLICATION

1. Name of the Scholarship Scheme
(a) Subject (b) Sub-subject
2. Name of the candidate (in BLOCK LETTERS), with full mailing address with Pin Code.
3. Date of birth and the State to which the candidate belongs.
4. Whether a member of SC/ST or a tribal or aboriginal community ? If so, give full particulars.
5. Academic record starting from High School/Higer Secondary :

A recent passport size photograph should be affixed here

Name of the Board/ University/Institution	Exam (s) Passed	Year of passing	Division/Class with position, if any*	Percentage of marks obtained & position, if any	Subjects taken
--	--------------------	--------------------	--	---	-------------------

(In case no Division/
Class is awarded and
only grading is done,
the conversion formula
adopted may be mentioned)

6. Details of Professional/Practical Training; and Research Experience, specifying the period and number of papers published.
(N.B. please give as much details as you can)
7. Particulars of employment

Office/Institution where employed (give full address)	Date of Joining	Date of Leaving	Post held	Monthly salary	Nature of duties
---	--------------------	--------------------	--------------	-------------------	---------------------

8. Have you been abroad ? If so, give full particulars of the country and the period. Also mention the year of return to India.
9. Proposed programme of study/research/training, specifying : (i) the work at present engaged in ; (ii) nature and programme of study/research desired ; (iii) future plans/prospects after the proposed studies/research; and (iv) how are these related to the technical or economic development of India ?
(N.B. please give as much details as you can)
10. Crossed Postal Order of Rupees five (Rs. 1.25p in case of SC/ST & other backward classes) payable to the Secretary, Ministry of Human Resource Development (Department of Education), New Delhi must be attached with the application form. Kindly give details of Postal Orders attached :

Sl. No.	Postal Order Number	Date of issue of P.O.	Name of the Post Office issuing the postal orders	Value of Postal Orders
				Rs. P.

NOTE : Employed persons must send their applications fully-sponsored by their employers. However, advance applications complete in all respects will be considered provisionally pending sponsorship by employers. Applications must be sent to the Assistant Educational Adviser, Ministry of Human Resource Development (Dept. of Education), External Scholarships Division, E.S.5 Section, Room No. 517, 'B' Wing, Shastri Bhavan, New Delhi-110001.

Place :

Date :

(Signature of candidate)

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No.	BOOKS	Rs.
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B 50	Altruism in Children, Usha Naidu (1980)	35.00
B 51	Health Situation of Youth in India, Usha Naidu and Paramuraman (1982)	30.00
B 52	Aging in India, K. G. Desai--Editor (1982)	35.00
B 53	Dr. S. D. Punekar Memorial Lecture--Accumulation, Employment and Labour Aristocracy--Towards Understanding Working Class Reality in India, K. R. Ranadive (1982)	20.00
B 54	Child Labour and Health : Problems & Prospects, edited by Usha S. Naidu and Kamini R. Kapadia (1985)	40.00
B 55	An Anthology of Short Stories for Social Work Education, M. M. Desai (1985)	105.00
B 56	Child Development Studies in India—Usha S. Naidu & Vrinda S. Nukhate (1985)	80.00
Cumulative Index to The Indian Journal of Social Work , Vols. 1-40 (1940-80)		
Compiled by K. R. Rao (1982)		15.00

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Advance payment is essential.

Indian Council of Agricultural Research

RAFI AHMED KIDWAI MEMORIAL PRIZES FOR AGRICULTURAL RESEARCH FOR THE BIENNIIUM 1984-85

Nominations are invited for the Rafi Ahmed Kidwai Memorial Prizes for Agricultural Research for the biennium 1984-85 carrying an amount of Rs. 10,000. (Rupees ten thousand only) in cash or kind or both, a citation and a certificate.

The award is given once in two years to Indian scientists for outstanding research, fundamental or applied, including inventions, discoveries, etc. leading to results of practical value in any field or subject within the purview of research in agriculture, animal husbandry and fisheries, including agricultural economics, agricultural statistics and nutrition. Only results of researchers' contributions made during the five years preceding the year of award shall be considered for the award. In the case of claims based on evolution of new varieties/strains, the final trials should have been completed within five years preceding the year of award.

Nominations can be made amongst others by Vice-Chancellors of agricultural universities/general universities with faculties of agricultural or biological sciences, Directors of research institutes, including Principals of agricultural and veterinary colleges, Presidents of scientific societies and academies and heads of the principal scientific establishments in the country such as CSIR, BARC etc.

Nominations for the award should be supported by a statement of work, achievement accomplished or performed by the candidate who is being nominated and a reasoned justification for the nomination together with reprints of publications or other supporting data. In all matters, decision of the Council shall be final and no correspondence on this account will be entertained.

The last date for receiving the nominations for the award is 30th April, 1986. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is 15th May, 1986. Proposals (in quadruplicate) on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri Kishori Lal, Additional Secretary (A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001. The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm x 12 cm. Applications/nominations received without four sets of reprints of publications are liable to be rejected at the scrutiny stage.

JAWAHARLAL NEHRU AWARDS FOR OUTSTANDING POST GRADUATE RESEARCH IN AGRICULTURE 1986

The Indian Council of Agricultural Research invites applications from post-graduate students who have obtained their Ph.D. degree during the year 1986 in the fields of agriculture/animal sciences (including fisheries) and home science for "Jawaharlal Nehru Award for Outstanding Post-graduate Research in Agriculture-1986". There will be ten prizes of Rs. 5,000/- each for outstanding research work of the following nature :

"Which may have bearing on finding a solution to any important national problem in the field of Agriculture, which is likely to have an impact on increasing the production or improving the quality of any important crop for human nutrition or animal productivity or increasing the technological efficiency of any process of economic importance connected with agriculture".

Candidates shall be required to submit the following documents through the head of the Institute from where the thesis has been obtained :

- (1) A copy of the thesis submitted by them for the award of the doctoral degree.
- (2) A certificate from the guide of the candidate for Ph.D. degree stating the extent to which the work is the candidate's own contribution.
- (3) 6 copies of the synopsis indicating precisely and in concise terms the work done by the candidate.
- (4) 6 copies of the bio data with complete address for correspondence with telegraphic address if possible.

The certificate awarded to the candidate for Ph.D. degree may also be sent. There is no prescribed proforma for applying for this award. Each candidate will be judged on the basis of the originality and the applied value of the investigations as revealed in the thesis submitted by him. In all matters relating to the award the decision of the Council shall be final and no correspondence on this account will be entertained.

Application with complete documents as mentioned above addressed to Shri Kishori Lal, Additional Secretary, (A), Indian Council of Agricultural Research, Krishi Bhavan, New Delhi-110001 should be sent so as to reach on or before 30th April, 1986. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States Union Territory in the North Eastern Region, Ladakh Division of J&K State and Sikkim is 15th May, 1986. The award winning thesis will be retained by the Council for record. In case the application is not accompanied by a copy of thesis and the required number of synopsis and bio-data, the application is liable to be rejected at the screening stage.

DR. RAJENDRA PRASAD AWARD FOR THE BEST ORIGINAL STANDARD WORKS IN HINDI ON AGRICULTURE INCLUDING ANIMAL SCIENCES AND FISHERIES--1986

Applications are invited for Dr. Rajendra Prasad award for the year 1986 for standard original books/manuscripts in Hindi on agriculture, including animal sciences and fisheries published/written between April 1985 to March, 1986. Books written by more than one author can also be considered. Five copies of the books/manuscripts for the award may be sent in a sealed cover marked 'Confidential' to Shri Kishori Lal, Additional Secretary (A), Indian Council of Agricultural Research, Krishi Bhavan, New Delhi-110001 latest by 30th April, 1986 in a prescribed form obtainable from him. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is 15th May, 1986.

In all matters relating to the award the decision of the Council shall be final and no correspondence on this account will be entertained.

HARI OM ASHRAM TRUST AWARDS FOR THE YEAR 1986

Nominations are invited for the Hari Om Ashram Trust Awards for the year 1986. Three awards of the value of Rs. 10,000/- each in cash or kind or both are given every year for outstanding original research, fundamental or applied including inventions, discoveries etc. leading to results of practical value in any field or subject within the purview of research in agricultural sciences, forest farming and social forestry and animal sciences (including fisheries).

All scientists engaged in research in the fields of agriculture, forest farming and social forestry, animal husbandry and allied sciences in India shall be eligible for the awards. The results of research achieved/contributions made during the five years preceding the year of the award shall only be considered for the awards. In the case of claims based on evolution of new varieties/strains, the final trials should have been completed within five years preceding the year of award.

Nominations can be made amongst others by Vice-Chancellors of agricultural universities or other universities having faculty of agricultural or biological sciences, Directors of Research Institutes including Principals of agricultural and veterinary colleges, Presidents of scientific societies, academies and heads of the principal scientific establishments in the country.

Nominations for the awards should be supported by a statement of work, achievement accomplished or performed by the candidate who is being nominated and a reasoned justification for the nomination together with reprints of publications or other supporting data.

The last date for receiving nominations for the awards is 30th April, 1986. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K States and Sikkim is 15th May, 1986. Five copies of the nominations on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri Kishori Lal Additional Secretary (A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001. The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm. x 12 cm. Applications/nominations received without five sets of reprints of publications are liable to be rejected at the scrutiny stage.

FAKHRUDDIN ALI AHMED AWARD FOR AGRICULTURAL RESEARCH IN TRIBAL AREAS FOR THE BIENNIAL 1984-85

Nominations are invited for the Fakhruddin Ali Ahmed Award for agricultural research in tribal areas for the biennium 1984-85. Two prizes of the value of Rs. 10,000 (Rupees ten thousand only) each in cash or kind or both will be awarded for outstanding original research carried out in the tribal areas in the field of agricultural sciences and animal sciences including fisheries.

All research workers engaged in research in agriculture, animal husbandry, fisheries and allied sciences in tribal areas (tribal areas for this purpose are those notified by the Ministry of Home Affairs, Govt. of India) shall be eligible for the award. The results of research achieved/contributions made during the five years preceding the year of the award shall only be considered for the award. In the case of claim based on evolution of new varieties/strains the final trials should have been completed within five years preceding the year of the award.

Nominations can be made amongst others, by the Vice-Chancellors of the agricultural universities or other universities which have a faculty of agricultural or biological sciences, Directors of research institutes including Principal of agricultural and veterinary colleges, Presidents of scientific societies, academies and heads of Principal scientific establishments in the country such as Council of Scientific and Industrial Research, Bhabha Atomic Research Centre etc. Each nomination for this award should be accompanied by a detailed statement of work and attainments of the nominee and a reasoned justification for the nominations together with the reprints of publications or other supporting data. Also, a certificate of residence in the tribal areas where the work has been done obtainable from Head of the Institutes, should be appended. It is emphasised that the award is intended for recognising outstanding research carried out in tribal areas.

and hence the scientist(s) concerned should have lived and carried out the research in any of the tribal areas notified by the Ministry of Home Affairs.

The last date for receiving nominations/applications is 20th April, 1986. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is 15th May, 1986. Four copies of the nominations on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri Kishori Lal, Additional Secretary (A), Indian Council of Agricultural Research, Krishi Bhawan, New Delhi-110001. The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm x 12 cm. Nominations received without four sets of reprints of publications are liable to be rejected at the scrutiny stage.

ICAR AWARDS FOR TEAM RESEARCH FOR THE BIENNIUM 1985-86

Nominations are invited for ICAR Award for Team Research for the biennium 1985-86. The award is given once in two years to interdisciplinary teams of research workers for outstanding research work in the field of agriculture including agricultural economics and statistics, animal husbandry and fisheries in the form of a scroll of honour and a medal to each member of the award winning team.

All scientists engaged in research in the field of agriculture, animal husbandry and fisheries sciences in India shall be eligible for the award. The award of each prize shall be made for notable and original interdisciplinary research both fundamental and applied as reflected in books, monographs, papers or other forms of published account of outstanding research work, inventions or discoveries. In the case of contributions like new crop varieties or new breeds of animal at least 3 years' date on the performance of the strains will have to be provided. The results of research achieved/contributions made by the team should be during the five years preceding the year of award.

Nominations can be made amongst others by Vice-Chancellors of agricultural universities or other universities having faculty of agricultural or biological sciences, Directors of research institutes including Principals of agricultural and veterinary colleges, Presidents of scientific establishments in the country such as CSIR, BARC etc.

Nominations for the award should be supported by a statement of the inter-disciplinary team work, achieved accomplished or performed by the team which is being nominated and a reasoned justification for the nomination together with the reprints of publications or other supporting data. In all matters relating to the award the decision of the Council shall be final and no correspondence on this account will be entertained.

The last date for receiving nominations for the award is 30th April, 1986. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep States/Union Territory in the North Eastern Region, Ladakh Division of J&K State & Sikkim is 15th May, 1986. Six copies of the proposals on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri Kishori Lal, Additional Secretary, Krishi Bhawan, New Delhi-110001. The copy of the proforma can be obtained from him by sending a self addressed envelope in the size of 27 cm x 12 cm. Applications/nominations received without six sets of reprints of publications are liable to be rejected at the scrutiny stage.

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THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Bhattacharyya, Sikha. *Bharatiya darsaner dristite pratyaksha jnan*. U Calcutta.
2. Mukhopadhyay, Debaprasad. *Some main existentialist approaches to man : Consciousness and freedom*. U Calcutta.
3. Roy, Samarendra K. *Language and reality : A study in the metaphysics of Wittgenstein's trutians*. NFHU, Shillong.

Religion

1. Kundu, Mamta. *A critical study of universal religion of Ramakrishna Paramhansa*. NBU, Rajarammohanpur.

Language & Literature

English

1. Dhindsa, Gurinder. *In defence of man : A study of Bernard Malamud's fiction*. Pb U, Chandigarh.
2. Jainapur, Satyadhyana Gopalrao. *Indo-Anglian poets from Karnatak : A critical assessment*. Kar U, Dharwad.
3. Jayaraman, R.K. *A contrastive grammar of the complex sentence structure in Khusi and English*. CIEFL, Hyderabad.
4. Mishra, Nanda Kishore. *Symbolism in Sri Aurobindo's Savitri*. Utkal U, Bhubaneswar.
5. Nair, Rama. *Theory of language in Indian aesthetics : A comparative approach*. OU, Hyderabad.
6. Pathan, Budankhan Abbaskhan. *The Gandhian myth in Indian novels in English*. Kar U, Dharwad.
7. Sarkar, Sunil Kumar. *Shakespeare's knowledge of human nature*. NBU, Rajarammohanpur.
8. Tiwari, Awadh N. *G.K. Chesterton as essayist and critic*. Kar U, Dharwad.

Sanskrit

1. Bhuyan, Sarojini. *Buddhacarita as an epic*. U Poona.

2. Dixit, Ram Sundar. *Prannkh upanishadon aur Ramayan mein nirdeshit jeevan darshan ka tilakatmak adhyayan*. Jiwaji U, Gwalior.

3. Jagbir Singh. *Utpal Dev ka Kashmir Shait darshan ko rogdan*. U Jammu.

4. Kamath, M. Shanthichandra. *The Raghaviyā of Rama-paniyā with the commentary balapathyā : A critical edition and study*. Calicut U.

5. Kapur, Shanta. *Sanskrit ke Ram Sambandhi natakon ke mool katha srot*. Pb U, Chandigarh.

6. Sudasiva Murty, Rani. *Vedic prosody : Its nature, origin and development*. Andhra U, Waltair.

Punjabi

1. Rajwani Kaur. *A critical study of Punjabi folk drama*. Pb U, Chandigarh.

2. Wasu, Inderjit Singh. *Concept of man in Gurmat and Sufi Punjabi poetry : A comparative study*. Pb. U, Chandigarh.

Hindi

1. Balbir Singh. *Sati-suhita mein manav-moolya*. Pb U, Chandigarh.

2. Barat, Madhumati. *Pratham swatautrata sangram se asukharos andolan tak Marathi torha Hindi upanyason ka tilakatmak adhyayan*. OU, Hyderabad.

3. Bisht, Gopal Datt. *Hindi ashudhi vigyan : Ek itihasik prakriya siddhant torha parayog ke vishisht samarbh mein*. Pb U, Chandigarh.

4. Dubey, Chandreswar. *A comparative study of grammatical categories in Nepali and Hindi*. Mani U, Imphal.

5. Dunakhe, Anshumati A. *Hindi aur Marathi samajik upanyason mein nari chitran*. Kolkhland 1947 se 1972 tak. U Poona.

6. Goley, Meena. *A style linguistic study of Sumitra Nandan Pant's poetry*. Bhopal U.

7. Govind Singh. *Ruchanaprakriya ke samarbhi mein Suryakant Tripathi Nirala ke karya ka adhyayan*. Pb U, Chandigarh.

8. Kashmiri Lal. *Manav milyon ke sandarbh mein Maithili sharan Gupta ke karya ka adhyayan*. Pb U, Chandigarh.

9. Kashyap, Mithlesh Mahesh. *Bharati Prasad Mishra ke karya mein samajik chehra*. MSU, Baroda.

10. Kulkarni, Madhuri M. *Aanbren aashak ke Hindi upanyas mein ke uayak*. U Poona.

11. Mishra, Rajendra Prasad. *Famishwarnath Reun aur Gopinath Mohanty ke katha sahitya mein ainchlikta*. JNU, Delhi.

12. Prabhune, Vijaya B. *Women as depicted in Hindi literature of the bhaktikaal*. SNDT, Bombay.

13. Rajan, C.S. *Kula ke sambandh mein Jung ke manovigyanic sidhant ke alok mein Ajneya kee karita ke pratibimbhya aur mithakiya tatyon ka adhyayan*. U Cochin.

14. Rupinder. *Swatmritra-purra Hindi ratha Punjab upanyas ka kathyagar tilnatiyak adhyayon*. Pb U, Chandigarh.

15. Sawalim, V.M. *Ishwar Das: Vyaktitva eron krititva*. Saur U, Rajkot.

16. Seth, Prabha. *Prasad karya kee bhisho*. OU, Hyderabad.

17. Sheela, V.P. *Girija Kumar Mathur ka karya: Samredana aur shilpa*. U Cochin.

18. Shrivastav, Ram Prabal Pratap Narain. *Sothottari Hindi upanyas mein nagariya sanskriti*. Jiwaji U, Gwalior.

19. Singh, Muni Kishore. *Ramriksh Benipuri kee patrakarita*. Mug U, Bodh Gaya.

20. Verma, Alka. *Acharya Hazari Prasad Dwivedi ke sameeksha sidhant*. Jiwaji U, Gwalior.

21. Viswam, V.V. *Adhunik karya pravrittiyon ke roopayon mein Nirala ka yog*. U Cochin.

Urdu

1. Wani, Zia-ud-din. *Khwaja Ahmad Abbas: Life and literary works*. U Jammu.

Bengali

1. Adhikari, Dipendra Kumar. *Influence of Rabindranath upon Nabinibala Devi*. Gauhati U.

2. Chakraborty, Parimal. *Short stories of Tarashankar: Evaluation of Tarashankar's short stories in the perspective of the contemporary Bengali short stories*. NBU, Rajaramnagar.

3. Das, Pulinranjan. *Alaankar sastre ricare vaisnav rasatatra o vaisnav padavati*. U Calcutta.

4. Samajdar, Patakibhushan. *Lokjivan charyar Bangla upanyas Kalasina, 1330-1378 Kallol theke Tara Sankarar Tirodhan*. U Calcutta.

Manipuri

1. Singha, Soram Sanatombi. *Manipuri phungra wart neioba, Mani*. U, Imphal.

Oriya

1. Das, Sudhakar. *Hiranyakasipu-Narasinha myth in Sanskrit and Oriya literature: A study*. Utkal U, Bhubaneswar.

2. Pande, Harihar. *Oriya sringara sastriya korya casapancaku*. Utkal U, Bhubaneswar.

Marathi

1. Katke, Kavita. *Veeranya of Marathi Saints, S.K. 1200 to S.K. 1700*. OU, Hyderabad.

2. Kuber, Vasant N. *Vyaktichitra ek vaagmaya prakar*. U Poona.

3. Kulkarni, Suchitra. *Editorial of Acharya P.K. Atre : A critical study*. SNDT, Bombay.

4. Sathe, Rajani. *Guander's abhang*. SNDT, Bombay.

Gujarati

1. Joshi, B.L. *Swami Anand, his personality and literature : A critical study*. Saur U, Rajkot.

Tamil

1. Nazeemdeen, P. *Folklore of Idikki Jill tribes*. U Ker, Trivandrum.

Kannada

1. Nagarajaiah, H.P. *Vaiddaradhene ondu toulimika adhyayana*. Bangalore U.

Telugu

1. Harischandra Prasad. *Journalism in Telugu : Its origin and development*. OU, Hyderabad.

2. Ramanamurti, Bhumidipalli Venkata. *Lohita Vagtbhavindri Lakshmana karivargudu*. Andhra U, Waltair.

Geography

1. Acharya, Mukund Murari. *A geographical analysis of scheduled caste population in Western Maharashtra and Marathwado and its economics*. Shivaji U, Kolhapur.

2. Nhalade Sudhakar Bhagwan. *Population geography of Ratnagiri District with special reference to unemployment problem*. Kur U, Dharwad.

History

1. David, Reid Syiemlieh. *British administration in Meghalaya : Policy and pattern*. NEHU, Shillong.

2. Johar, Shamsher Singh. *Spread of Sikh religion and culture in Jammu and Kashmir upto 1961*. U Jammu.

3. Joshi Shashi. *The Left and the Indian National Movement, 1920-35*. JNU, Delhi.

4. Kalita, Bharat Chandra. *Medieval Assam : A study in its military activities, 1200-1675 A.D.* U Poona.

5. Mishra, Arun Kumar. *Trading communities in early Ancient India, from earliest times to 300 A.D.* U Bihar, Muzaffarpur.

6. Mukhopadhyay, Dipu. *Deputy Commissioners in British administration : A case study of Khasi and Jaintia Hills*. NEHU, Shillong.

7. Patnaik, Ashok Kumar. *Soviet influence on the policy programme of the Indian revolutionary movement, 1917-1929 : A study in its ideological orientation*. JNU, Delhi.

8. Ramachandra Chetty, Kuitkapalli. *A history of the Telugu cholas in Southern Andhra*. U Ker, Dharwad.

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10. Vinod Kumar. *M.K. Gandhi and untouchables, 1920-40*. U Jammu.

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Chapman, John W., ed. *Western university on trial*. Berkeley, University of California Press (c1983) xiii, 238p.

Committee of Vice Chancellors and Principals of the Universities of the U.K., London. *Administrative Training Committee, Knowing your job*. Edinburg, Author, 1982. Discontd.

Commonwealth Secretariat, London. *Towards a commonwealth higher education programme : Strategies for action*. London Author, 1983. 34p.

Dennison, W.F. *Educational finance and resources*. London, Croom Helm (c1984) 271p.

Fieiller, Jean Claude and Orivel, F. *Allocation of resources to education throughout the world : Statistical study*. Paris, Unesco, 1980. 101p.

Freire, Paulo. *Politics of education : Culture power and liberation*. Houndsills, Macmillan, 1985. xxv, 209p.

Goyal, C. *Indian teacher educator : Some characteristics*. Agra, National Psychological Corporation, 1985. 184p.

Illingworth, Ray and Gregory, Kenneth. *Ashes : A centenary* London, Collins, 1982. 272p.

India, University Grants Commission. *Report of the national seminar on futuristic approach to teacher education*. Pune, S.N.D.T. College of Education for Women, 1985. Discontd.

International Seminar on Financing Educational Development, Mont Sainte Marie (Canada), 1982. *Proceedings*. Ouawa, International Development Research Centre, 1982. 142p.

Jha, K.N. *Women towards modernization*. Patna, Janaki Prakashan, 1985. 127p.

Kaul, Sheila. *Reflections on contemporary education : Selected addresses*. India, Ministry of Education & Culture, 1984. ii, 108p.

Khan, Inayat. *Suitability of teaching english through correspondence*. New Delhi, Ashish Publishing, 1985. vi, 220p.

Kirp, David L. *Just schools : The idea of racial equality in American education*. Berkeley, University of California Press (c1982) xiii, 374p.

Langford, Glenn. *Education, persons and society : A philosophical enquiry*. Houndsill, Macmillan (c1985) vi, 205p.

Lloyd-Smith, Mel., ed. *Disrupted schooling : The growth of the special unit*. London, John Murray (c1984) viii, 160p.

Mother Teresa Women's University, Kodaikanal. *Towards equal status*. Madras, Author, 1982. 153p.

Panjab. Education Reforms Commission (Chairman : Prof. R.N. Dogra) 1985. *Frame work for implementation of education*

reforms in Punjab

5V. Chandigarh, Author, 1985. V.1. *Education in Punjab*. 88p. V.2. *Educational structure, processes, for implementation*. 212p. V.3. *Organisation and management of education... and financial implication*. 169p. V.4. *University education*. 72p. V.5. *Summary of recommendations*. 90p.

Parmaji, S. *Caste, reservations and performance : Research findings*. Warangal, Mamta, 1985. ii, 208p.

Samai, J.K. *History of education in Orissa, 1905-1936*. Calcutta, Punthi, 1984, xiv, 232p.

Shah, S. Shamim. *Data base : The missing factor in our educational and economic progress*. Delhi, Hamdard Education Society, 1984. 44p.

Sharma, Meenakshi. *Adolescents' satisfaction with educational institutions*. New Delhi, M.N. Publishers (c1985) xi, 144p.

Shills, Edward. *Academic ethic*. Chicago, University of Chicago Press (c1983) 112p.

Tarcov, Nathan. *Locke's education for liberty*. Chicago, University of Chicago Press (c1984) 280p.

Taylor, Richard, etc. *University adult education in England and the U.S.A : A reappraisal of the liberal tradition*. London, Croom Helm (c1985) 247p.

Turner, Sheila A. and Ingle, Richard B., ed. *New developments in mutton education*. Paris, Unesco, 1985. 232p.

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Centre for Cellular & Molecular Biology

HYDERABAD

(Council of Scientific & Industrial Research)

ADVERTISEMENT No. 1.86

Applications in the prescribed form are invited for the following posts :

1. SCIENTIST E/F/EII (three posts)
Gr. Rs. 1500-60-1800-100-2000/1800-
100-2000-125/2-2250

Educational qualifications and experience
Essential : A Ph.D. degree in an area of biochemistry, cell biology, molecular biology, biophysics or any other related branch of modern biology, with at least 12 years' research experience after M.Sc. Evidence of ability to carry out independent work of a high quality, such as an outstanding record of published work which shows that the person is capable of generating new and original ideas.

Desirable : Familiarity with modern techniques used in biological research and a wide-based knowledge in the field of modern biology which would allow the person to interact with scientists working at the Centre in areas other than his own. Substantial experience of work in one or more of the following areas : Immunology ; genetics ; physical biochemistry ; biophysics ; molecular biology ; cell biology ; virology ; neurobiology ; or techniques such as electron microscopy, tissue culture, recombinant D.N.A. technology, etc.

Job requirements : The above positions are senior positions for which only those who have the capacity to generate new and worthwhile ideas and take them to fruition will be considered.

2. SCIENTIST 'C' (four posts)

Gr. Rs. 1100-50-1600

Qualifications and experience : A first class M.Sc. with preferably a Ph.D. At least 6 years' experience of research after M.Sc. in an area of biochemistry, cell biology, molecular biology, biophysics, or any other related branch of modern biology. High level of expertise in one or more of the techniques used in modern biology.

Job requirements : To assist in the planning and execution of research projects under the overall supervision of a senior independent investigator and to carry out related activities that may be assigned to the scientist from time to time.

3. SCIENTIST 'B' (six posts)

Gr. Rs. 700-40-900-EB-40-1100-50-1300
Code No. 3(a) (five posts) four posts reserved for SC and one for ST.

Educational qualifications and experience
Essential : A first class M.Sc.

Desirable : 2-3 years' experience in a reputed laboratory/research institution. Familiarity with some of the techniques used in modern biological research.
Job requirements : To provide competent technical/scientific assistance in the execution of research projects at the Centre, and to carry out related

activities that may be assigned to the incumbent from time to time. The work may involve assistance with technique-oriented work such as electron microscopy, animal or plant cell tissue culture, amino acid analysis etc.

Code No. 3(b) (one post)

Educational qualifications and experience
Essential : A first class M.Sc. or M.Tech., or a basic degree in Science with a postgraduate diploma in journalism/publications/mass communication/public relations considered as equivalent to a postgraduate degree.

Desirable : 2-3 years' relevant experience with flair for facile expression; a good command of written and spoken English and the national and regional language; a general understanding and appreciation of modern scientific developments; good general knowledge specially about the Country in general and the twin-cities in particular.

Job requirements : The selected incumbent would be expected to organise scientific and technical seminars, symposia, colloquia, etc. help with publications emerging from the laboratory and in coordinating scientific activities, with public sector undertakings, State and Central Government agencies and the press; and take care of visitors.

4. SENIOR TECHNICAL ASSISTANT (four posts)

Gr. Rs. 550-25-750-EB-30-900

Code No. 4(a) (three posts) - one post reserved for SC

Qualifications and experience : B.Sc. with 3-5 years' experience in a research laboratory in an area of modern biology. Persons with at least 6 years experience will be preferred.

Job requirements : The selected candidate will be required to assist the senior staff in various research projects of the Centre and carry out such other related work as may be assigned from time to time.

Code no. 4(b) (one post)

Qualifications and experience : B.Sc. with 3-5 years' experience of scientific or documentation work. Persons with at least 6 years experience will be preferred. Should have an excellent command of English and familiarity with scientific documentation, bibliography compilation and editing. Applications must be accompanied with a one-page hand-written essay in English on 'How can I help a scientist engaged in frontier-areas of basic research?'.

Job requirements : The incumbent is expected to help the senior research staff in collection of scientific and technical information, documentation, and editing of scientific papers, reports, etc.

5. TECHNICAL ASSISTANT GR. VIII (ten posts)

Gr. Rs. 425-15-500-EB-15-560-20-700
Code No. 5(a) (nine posts)-five posts reserved for SC and three posts for ST. Others may also apply.

Educational qualifications and experience
Essential : B.Sc. or an equivalent qualification.

Desirable : 2-3 years' experience in a research laboratory/institute.

Job requirements : To provide technical/scientific assistance in the execution of research projects in progress at the Centre. The work may involve assistance with technique-oriented work.

Code No. 5(b) (one post)

Educational qualifications and experience
Essential : B.Sc. (Biology) or a three-year diploma in Animal Technology or related field.

Desirable : 2-3 years' experience in the care, breeding and management of inbred rodent colonies. Knowledge in experimental and surgical techniques.

Job requirements : The incumbent will be required to assist the Scientist-in-charge in the day-to-day animal house work and look after the animals in the animal house and other related jobs as may be assigned from time to time.

6. SENIOR TECHNICAL ASSISTANT (PLANNING) (one post)

Gr. Rs. 550-25-750-EB-30-900

Qualifications and experience : A bachelor's degree in science with 3-5 years' experience in one or more of the areas given under job requirements. Persons with at least 6 years experience will be preferred.

Desirable : Training/experience in the application of computers to modern management techniques.

Job requirements : To carry out one or more of the following functions/duties :

- (a) budgetary planning and monitoring;
- (b) personnel planning and maintenance of personnel records, with particular reference to scientific and technical work, publications, etc.;
- (c) planning and operation of inventory control system for consumable stores;
- (d) providing assistance in organising and convening seminars, meetings, workshops, training programmes, entrance tests, etc.;
- (e) preparation of annual and other reports of the Centre, and collection, collation and compilation of information and data regarding the Centre's research and other activities as may be required for such reports;
- (f) liaison between the Centre and other individuals, institutions and organisations in India and abroad;

(g) collection and collation of scientific and technical data required by the Centre for its research and associated activities;

(h) any other related work as may be assigned from time to time.

7. **TECHNICAL OFFICER 'EII'** (one post)
Gr. Rs. 1800-100-2000-125/2-2250

Qualifications and experience : A first class Bachelor's degree in Mechanical/Electrical/Civil Engineering with at least 12 years' experience or a Master's degree in Engineering in the above fields with at least 10 years' experience. Proven ability in planning and supervision of construction, including various services generally used in a laboratory/industrial complex, and in the management and maintenance of these services. The services used include power including emergency power, and un-interrupted power supply; water including water-treatment; central air-conditioning including cold and hot rooms; liquid nitrogen and gas plants; centralised compressed air and vacuum systems; waste management and disposal; fabrication and machine shop; central fire and other alarm system; etc. At least 5 years' experience in a managerial position in the above field in a research/industrial organisation. Ability to carry out work in at least one area with his/her own hands with a high degree of technical competence.

Job requirements : The selected officer would be required to plan and supervise construction and installation of services and be responsible for their maintenance. He/She will also be expected to shoulder the overall responsibility of a Workshop.

8. **EXECUTIVE ENGINEER (CIVIL)**
(one post)
Gr. Rs. 1100-50-1600

Qualifications and experience : A bachelor's degree in civil engineering with 10 years' experience in the planning, construction and maintenance of buildings for laboratories, plants, workshops, residences, water reservoirs, overhead water tanks, underground water tanks, etc., and of services such as water, sanitation, drainage, roads, gardens, landscaping, etc., in a major research organisation or industry.

Job requirements

- (a) planning, construction and maintenance of the laboratory and ancillary buildings and residential quarters with affiliated services such as, water, sanitation, drainage, etc.
- (b) planning, construction and maintenance of roads, gardens and landscaping with services, such as water and drainage.
- (c) planning, construction and maintenance of wet waste disposal and treatment systems, both for laboratory and residential wastes.
- (d) coordination with other staff engaged in other associated planning, erection services and maintenance activities.
- (e) to carry out any other related duties as may be assigned from time to time.

9. **TECHNICAL OFFICER 'B'
(HORTICULTURE)** (one post)
Gr. Rs. 700-40-900-EB-40-1100-50-1300

Educational qualifications and experience
Essential : A first class M.Sc. in horticulture or a related field, or a B.Sc. with a first class postgraduate diploma in horticulture considered equivalent to M.Sc.

Desirable : 2-3 years' experience in design and maintenance of large gardens and grounds, including work related to landscaping, in a reputed organisation.

Job requirements : To be responsible for landscaping and designing of the grounds and gardens of the Centre; to execute the plans made; and to maintain grounds and gardens of the Centre including an experimental green house/farm for work in plant biochemistry or related fields.

10. **TECHNICAL OFFICER 'B'** (three posts)--one post reserved for SC and one for ST-others may also apply.
Gr. Rs. 700-1300.

Educational qualifications and experience
Essential : A first class B.E. or equivalent in Mechanical/Electrical engineering/Electronics.

Desirable : 2-3 years' experience in the field of operation and maintenance of services, with particular reference to the application of computer techniques in these areas.

Job requirements : to carry out the following in round-the-clock shifts:

- (a) to man and operate a computerised central monitoring system;
- (b) to assist in the supervision of operation round-the-clock, of services such as power, emergency power, water, gas, central compressed air and vacuum systems, central air-conditioning (including cold and hot rooms) communication systems, etc.)
- (c) to assist in the planning and operation of a preventive and break-down maintenance system for services and facilities such as those listed at (b) above, as well as for other similar infrastructural facilities in the Centre;
- (d) to assist in the planning and operation of a stores inventory control system, for spares, for services and facilities mentioned above;
- (e) to carry out other related duties as may be assigned from time to time.

11. **TECHNICAL OFFICER 'B'
(MECHANICAL)** (one post)
Gr. Rs. 700-1300

Educational qualifications and experience
Essential : A first class B.E. or equivalent in mechanical engineering.

Desirable : 2-3 years' experience in a responsible position in the fields given under job requirements. Knowledge of Telugu and Hindi.

Job requirements : Operation and maintenance of a 33 KV electrical sub-station, diesel generator sets, all electrical services, plants, etc.; planning and instalation of new electrical services and systems; coordination with other staff engaged in other services and maintenance activities; and other related duties as may be assigned from time to time.

12. **SENIOR TECHNICAL ASSISTANT
(MECHANICAL)** (one post)
Gr. Rs. 550-25-750-EB-30-900

Qualifications and experience : A diploma in mechanical engineering of 3 years' duration from a recognised University with 3-5 years' experience in one or more of the fields given under job requirements. Persons with at least 6 years experience will be preferred.

Job requirements : To assist in the operation and maintenance of one or more of the following:

- (a) a machine and fabrication shop, including work with various metals, plastics and wood;
- (b) an LDO (light diesel oil) cracking gas plant and its distribution system;
- (c) water receipt, treatment and distribution;
- (d) air compressor and vacuum pumps, including central plants and distribution systems;
- (e) automobile maintenance and repairs;
- (f) other related duties as may be assigned from time to time.

13. **TECHNICAL OFFICER 'B' (ELECTRICAL)** (one post--reserved for ST)
Gr. Rs. 700-40-900-EB-40-1100-50-1300

Educational qualifications and experience
Essential : A first class B.E. or equivalent in electrical engineering.

Desirable : 2-3 years' experience in a responsible position in the fields given under job requirements. Knowledge of Telugu and Hindi.

Job requirements : Operation and maintenance of a 33 KV electrical sub-station, diesel generator sets, all electrical services, plants, etc.; planning and instalation of new electrical services and systems; coordination with other staff engaged in other services and maintenance activities; and other related duties as may be assigned from time to time.

14. **TECHNICAL OFFICER 'A' (ELECTRICAL/AIRCONDITIONING)**
one post Gr. Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200

Qualifications and experience

A diploma in engineering of 3 years' duration from a recognised university in electrical engineering, or air-conditioning and refrigeration, with 5-8 years' experience in at least one of the fields given under job requirements and with a working knowledge of the others. Candidates with at least 12 years' experience will be preferred.

Job requirements : (1) To assist in the operation and routine and emergency maintenance of the following systems which need to be attended to on a round-the-clock basis:

- (a) a 33 KV electrical sub-station with its associated L T distribution

systems, including lighting and power;

(b) diesel generators (the Centre has at present three 500 KVA diesel generators);

(c) central air-conditioning plant, including cold rooms and hot rooms and associated units and systems, such as fan coil units etc.;

(2) General electrical functions, maintenance and problem-solving work.

(3) To carry out other related duties as may be assigned from time to time.

15. SENIOR TECHNICAL ASSISTANT (ELECTRICAL/AIRCONDITIONING) Gr. Rs. 550-25-750-EB-30-900 (two posts)-one post reserved for SC.

Qualifications and experience : A diploma in engineering of 3 years' duration from a recognised university in electrical engineering, or air-conditioning and refrigeration, with 3-5 years' experience in at least one of the fields given under job requirements and with a working knowledge of the others. Persons with 6 years' experience will be preferred.

Job requirements : (1) To assist in the operation and routine and emergency maintenance of the following systems which need to be attended to on a round-the-clock basis:

(a) a 33 KV electrical sub-station with its associated LT distribution systems, including lighting and power;

(b) diesel generators (the Centre has at present 3 500 KVA diesel generators);

(c) central airconditioning plant, including cold rooms and hot rooms and associated units and systems, such as fan coil unit etc.;

(2) General electrical functions, maintenance and problem-solving work.

(3) To carry out other related duties as may be assigned from time to time.

16. TECHNICIAN GR. VIII (ELECTRICAL) (one post)-reserved for SC, Gr. Rs. 425-5-500-EB-15-560-20-700

Qualifications and experience : L.T.I. certificate in the trade of electrician with at least 15 years' experience in the installation, operation and maintenance of electrical installations as given under job requirements.

Job requirements : to carry out one or more of the following:

(a) to install, service and repair electrical installations such as wiring, cables, switchgear etc.;

(b) to service and repair electrical motors and equipment;

(c) to operate round-the-clock and carry out routine emergency maintenance of a 33 KV substation and diesel generators on a shift system;

(d) to carry out other related duties as may be assigned from time to time.

17. TECHNICIAN GR. VIII (AIRCONDITIONING AND REFRIGERATION) Gr. Rs. 425-700 (two posts)-one post reserved for SC.

Qualifications and experience : L.T.I. certificate in the trade of airconditioning and refrigeration with 15 years' ex-

perience in one or more of the fields given under job requirements.

Job requirements : to carry out one or more of the following:

(a) to operate round-the-clock and to carry out routine emergency maintenance of a large central air-conditioning plant, including cold rooms and hot rooms and associated equipment such as AHU, fan coil units etc.;

(b) to operate and maintain a liquid nitrogen plant;

(c) to install, service and repair air-conditioning and refrigeration equipment; and

(d) to carry out any other related duties as may be assigned from time to time.

18. TECHNICIAN GR. VIII (three posts) Gr. Rs. 425-15-500-EB-15-560-20-700, Code No. 18(a) (one post)

Qualifications and experience : L.T.I. certificate in the trade of plumber with 15 years' experience in the installation and maintenance of metallic and non-metallic pipelines and outlets used for water, drainage, gas, compressed air, vacuum etc.

Job requirements : Installation and maintenance of pipelines and outlets in the Centre and any other related duties as may be assigned from time to time.

Code No. 18(b) (one post) - reserved for SC.

Qualifications and experience : L.T.I. certificate in the trade of fitter/mechanic with 15 years' experience in one or more of the fields given under job requirements.

Job requirements : to carry out one or more of the following:

(a) to operate and maintain a LDO cracking gas plant;

(b) to operate and maintain central compressed air and vacuum plants;

(c) to carry out any other related duties as may be assigned from time to time.

Code No. 18 (c) (one post)-reserved for ST.

Qualifications and experience : L.T.I. certificate in the trade of fitter/pump/mechanic/plumber with 15 years' experience in the fields given under job requirements or in related fields.

Job requirements : To receive, treat and distribute water, to operate and maintain a water treatment plant and to carry out any other related duties as may be assigned from time to time. At least a part of this work may have to be carried out outside normal working hours on a shift system.

19. TECHNICAL ASSISTANT GR. VIII (ELECTRONICS) (two posts) - One post reserved for SC and one for physically Handicapped, Gr. Rs. 425-15-EB-15-560-20-700

Educational qualifications and experience Essential : A three-year Diploma in Electronics or B.Sc. (Physics Electronics).

Desirable : 2-3 years' experience in installation, testing, repair and maintenance of electronic instruments.

Job requirements : To carry out the work of testing, installation, repair and maintenance of electronic and analytical instruments used in the Centre.

20. TECHNICAL OFFICER 'C' (STAFF OFFICER) (one post) Gr. Rs. 1100-50-1600

Educational qualifications and experience

Essential : A first class Bachelor's degree in any area of engineering or technology or a first class M.Sc. degree. A diploma in Business Management from a recognised and reputed institution, with 6 years' experience related to administration/management in a research laboratory or a R&D organisation.

Desirable : Knowledge of the management needs and requirements of a sophisticated laboratory engaged in research in modern biology.

Job requirements : To co-ordinate the administrative and scientific activities of the Centre and to act as a liaison between the Director of the Centre and the Administration within the Centre, the CSIR, and any other organisation with which the Centre may be concerned, and to carry out related activities that may be assigned from time to time.

21. TECHNICAL OFFICER 'A' (LAB. SUPERVISION) Gr. Rs. 650-30-740-35-880-40-1000-EB-40-1200

Qualifications and experience : A diploma in engineering of 3 years' duration from a recognised university, with 5-8 years' experience in one or more of the fields given under job requirements or in related fields. Candidate at least 12 years' experience will be preferred.

Job requirements :

(a) to assist in the supervision of the cleaning of the laboratories and other buildings, roads, grounds and gardens of the Centre, and of its waste collection and disposal systems;

(b) to assist in the routine preventive maintenance of all services, such as power, water, gas, compressed air, vacuum, communications, and other infrastructural facilities etc.

(c) to carry out other related duties as may be assigned from time to time.

At least a part of the above work may have to be carried out outside the normal working hours.

22. SENIOR TECHNICAL ASSISTANT (LAB. SUPERVISION) (one post)-reserved for ST

Gr. Rs. 500-25-750-EB-30-900

Qualifications and experience : A diploma in Engineering of 3-years' duration from a recognised university, with 3-5 years' experience in one or more of the fields given under job requirements or in related fields. Persons with at least 5 years' experience will be preferred.

Job requirements :

(a) to assist in the supervision of the cleaning of the laboratories and

other buildings, roads, grounds and gardens of the Centre, and of its waste collection and disposal system;

- (b) to assist in the routine preventive maintenance of all services, such as power, water, gas, compressed air, vacuum, communications, and other infrastructural facilities, etc.
- (c) to carry out other related duties as may be assigned from time to time.

At least a part of the above work may have to be carried out outside the normal working hours.

23. TECHNICAL ASSISTANT GR. VIII (LAB. SUPERVISION) (one post)—reserved for Ex-Serviceman
Rs. 425-15-500-EB-15-560-20-700

Educational qualifications and experience
Essential : Diploma in engineering of 3-years' duration from a recognised university.

Desirable : 2-3 years' experience in one or more of the fields given under job requirements or in a related field.

Job requirements :

- (a) to assist in the supervision of the cleaning of the laboratories and other buildings, roads, grounds and gardens of the Centre, and of its waste collection and disposal system;
- (b) to assist in the routine preventive maintenance of all services, such as power, water, gas, compressed air, vacuum, communications, and other infrastructural facilities, etc.
- (c) to carry out other related duties as may be assigned from time to time.

At least a part of the above work may have to be carried out outside the normal working hours.

24. SECURITY OFFICER (one post)

Gr. Rs. 1100-50-1600

Qualifications and experience : A Bachelor's or Master's degree from any recognised university with at least 12-15 years' experience in a similar position in a large industrial undertaking, research laboratory, police or defence services. The incumbent should be conversant with modern methods of industrial/laboratory security, fire prevention, etc. Should be able to handle fire arms. Should possess a good physique and personality, and be of sound health. Preference will be given to an ex-serviceman.

Age limit : Maximum age limit is 45 years, which is relaxable for CSIR employees, Scheduled Caste and Scheduled Tribe candidates, and other specified categories as per Government of India instructions.

Job requirements : Will be responsible for and incharge of the whole security, watch & ward, and fire fighting arrangements of the Centre. Would liaison with the local police authority etc., and carry out any other related work or responsibility assigned from time to time.

25. ASSISTANT SECURITY OFFICER (one post)
Gr. Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200

Qualifications and experience : A degree of a recognised university with at least 5-7 years' experience in a similar position in a large industrial undertaking, research laboratory, police or defence services. The incumbent should be conversant with modern methods of industrial laboratory security, fire prevention, etc. Should be able to handle fire arms and should possess a good physique and personality. Preference will be given to an ex-serviceman.

Age limit : Should not exceed 40 years, which is relaxable for CSIR employees, Scheduled Caste and Scheduled Tribe candidates, and other specified categories as per Government of India instructions.

Job requirements : Will be responsible, under the supervision of a Senior Officer, for security, watch & ward, and fire fighting arrangements of the Centre. Should be capable of interacting with the local police and other authorities. Will also be expected to carry out such other work as may be assigned from time to time.

26. TECHNICAL ASSISTANT GR. VIII (one post)—reserved for Ex-serviceman
Gr. Rs. 425-15-500-EB-15-560-20-700

Educational qualifications and experience
Essential : A degree in Home Science or a three-year Diploma in Catering Technology.

Desirable : 2-3 years' experience in the fields of foods and nutrition or of work in a canteen/cafeteria of a reputed organisation.

Job requirements : To assist the scientific staff in projects requiring the above experience and such other related work as may be assigned from time to time.

GENERAL CONDITIONS

(i) All the above posts carry usual allowances as admissible to Central Government employees of the same pay and status stationed at Hyderabad. Higher

initial start may be considered for deserving candidates. Total emoluments at the minimum of the grades at present are as follows:

On Rs. 1,800/-	..	Rs. 3,984.00
On Rs. 1,500/-	..	Rs. 3,315.00
On Rs. 1,100/-	..	Rs. 2,875.00
On Rs. 700/-	..	Rs. 2,040.00
On Rs. 650/-	..	Rs. 1,889.35
On Rs. 550/-	..	Rs. 1,607.90
On Rs. 425/-	..	Rs. 1,370.90

(ii) Appointments in the scale of Rs. 700-1300 and above (except in the case of the Security Officer) will be on contract for a period of six years (including the period of probation of two years) in the first instance except for CSIR employees already confirmed against lower posts. The remaining posts are pensionable subject to the CSIR rules and regulations in force.

(iii) The number of vacancies mentioned against each category is provisional and may vary at the time of selection. If more vacancies with identical job requirements become available at the time of selection or another one year after the selection, these can also be filled from among the candidates who might apply for the above posts.

(iv) The appointment will be made either in the advertised grade or in the lower grade depending upon the qualifications and experience of the selected candidates.

(v) Candidates with engineering qualifications, if so required are liable to serve in any defence service or post connected with defence of India for a period of not less than 4 years, including period spent on training, if any, provided that such a person (a) shall not be required to serve on the above post after expiry of 10 years from the date of appointment; and (b) shall not be ordinarily required to serve as aforesaid after attaining the age of 35 years.

(vi) The following posts have been reserved for Scheduled Caste/Tribe candidates:

Sl No./ Code No.	Designation of the Post	No. of Posts	
		SC	ST
3(a)	Scientist B	4*	1*
4(a)	Senior Technical Assistant	1*	—
5	Technical Asstt. Gr. VIII	5	3*
10	Technical Officer B	1*	1*
13	Technical Officer B	—	1*
15	Senior Technical Assistant	1	—
16	Technician Gr. VIII	1	—
17	Technician Gr. VIII	1	—
18	Technician Gr. VIII	1	1
19	Technical Assistant Gr. VIII	1	—
22	Senior Technical Assistant	—	1

*against these positions candidates belonging to other communities may also apply.

One post of Technical Assistant Gr. VIII at Sl. No. 19 has been reserved for Physically handicapped candidates (dumb/partial physical infirmity). One post each of Technical Assistant Gr. VIII at Sl No. 23 and 26 has been reserved for Ex-Servicemen.

(vii) A lower standard of suitability consistent with efficiency will be applied in respect of Scheduled Caste (SC)/Scheduled Tribe (ST) candidates. Candidates belonging to these communities should invariably enclose an attested copy of the original caste certificate issued by a competent authority with their application failing which they will not be entitled to the concession otherwise admissible to them.

(viii) Since it is not possible to call all the candidates for interview/test, the applications will be shortlisted for the purpose and the decision of a duly constituted screening committee of the Centre will be final in this regard.

(ix) Applicants called for interview will be paid single second class railfare to and

from the actual place of undertaking the journey or from the normal place of residence whichever is nearer to Secunderabad Railway Station, on the production of relevant documents of travel.

Hyderabad-500 007, A.P. India so as to reach him on or before **14th February 1986**. Applications received after this date will not be entertained.

(x) The prescribed application forms for the above posts may be obtained from the Administrative Officer, Centre for Cellular & Molecular Biology, RRL campus, Uppal Road, Hyderabad-500 007, A.P., India by sending a requisition along with a self-addressed STAMPED (worth Rs. 0.70) envelope (23 x 10 cms.) on or before 1-2-1986. Applications duly completed (supported by attesting copies of certificates and testimonials) along with a non-refundable fee of Rs. 8.00 (no application fee is prescribed for SC/ST candidates) in the form of crossed Indian Postal Order drawn in favour of the Director, Centre for Cellular & Molecular Biology, Hyderabad should be sent to the Administrative Officer, Centre for Cellular & Molecular Biology, RRL Campus, Uppal Road,

(xi) Applying for any position advertised herein does not by itself automatically entitle an applicant to be called for interview, which will be governed by prevailing rules and regulations.

(xii) Applications from employees working in Government Departments, Public Sector Undertakings and Government funded research agencies will be considered only if forwarded through proper channel and with a clear certificate that the applicant will be relieved within one month of receipt of the appointment order.

(xiii) Applications received after last date viz. **14-2-1986** and/or incomplete applications are liable to be summarily rejected and no interim enquiries will be attended to.

CONSULT US FOR

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Scientific Supplies & Services Technical Engineers

P-39, PRINCEP STREET, CALCUTTA-700 072

GAUHATI UNIVERSITY

Advertisement No. 1 of 1986

Applications are invited for the following posts in the prescribed form given below :

1. Professor of Commerce Specialisation
— One post (permanent)
— Open.
2. Professor of Physics Specialisation
— X-Ray Crystallography/Theoretical Solid State Physics/Mathematical Physics.
— One post (permanent)
3. Reader in Commerce Specialisation
— One post (6th Plan)
— Open.
4. Reader in Chemistry Specialisation
— One post (permanent)
— Physical Chemistry.
5. Reader in Geography Specialisation
— The candidate should have evidence of strong background in respect of understanding and application of Cartographic and quantitative methods in Geography.
— One post (6th Plan)
6. Reader in Library & Information Science Specialisation
— Open.
7. Reader in Geology Specialisation
— One post (permanent)
— Pre-Cambrian Geology (Metamorphites/Himalayan Geology).
8. Reader in Psychology Qualification Specialisation
— Two posts (6th Plan)
— M.A./M.Sc. in Psychology.
— (a) for one post—Guidance and Counselling.
— (b) for the other—Experimental Psychology.
9. Lecturer in Psychology Qualification Specialisation
— Two posts (6th Plan)
— M.A./M.Sc. in Psychology.
— Open.
10. Lecturer/Scientific Officer in U.S.I.C. Qualification
— Three posts—One post XRD Estab. and Two posts—(6th Plan).
— At least 2nd class BE/B.Tech./M.Sc. with two years of experience in Operation of Sophisticated instrument, its repair and maintenance. A flair for R & D. activity in instrumentation and experience in electronic instruments are preferable. For the post the XRD Estab., M.Sc. with at least two years experience in X-Ray diffraction equipments and techniques are desirable.
11. Lecturer in Zoology Specialisation
— One post (permanent)
— Animal Physiology. Candidate must be an M.Sc. in Zoology with specialisation in Physiology having research and teaching experience in Physiology.
12. Lecturer in Foreign Language Specialisation
— One post (permanent)
13. Lecturer in Statistics Specialisation
— Capable of teaching multi-variate analysis and theory of distribution.
— One post (permanent)
14. Lecturer in Library & Information Science Qualification
— (a) Consistently good academic record with First or Higher Second Class (B—) in M.Lib. Sc./M.L. Isc. or an equivalent degree from a Foreign Universities.
— (b) At least two years experience of working in a recognised Library in a responsible professional capacity.
— (c) Research/reference publications are desirable. Preference will be given to a person having acquaintance with information technology of Information storage and retrieval.

Scales of Pay :

1. Professor—Rs. 1500-60-1800-100-2000-125/2-2500/-
2. Reader —Rs. 1200-50-1300-60-1900/-
3. Lecturer —Rs. 700-40-1100-50-1600/-
4. S.O. —Rs. 700-40-900-EB-40-1100-50-1300/-

All posts carry usual allowances admissible under the University rules in force from time to time.

ESSENTIAL QUALIFICATIONS
PROFESSOR —

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at Doctoral level.

OR,

An outstanding scholar with established reputation who has made significant contribution to knowledge.

READER —

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that atleast three of these years were as lecturer or in an equivalent position. This condition may be relaxed in the case of candidates with outstanding research work.

LECTURER :—

(a) A Doctor's degree of research work of an equally high standard and (b) Good academic record with at least Second Class (c) in the seven point scale Master's degree in relevant subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research of high standard within eight years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

PRESCRIBED FORM

1. Advertisement No. :
2. Name of the post applied for :
3. Name of the applicant in full (in block letters) :
4. Father's Name :
5. Home address (in full) :
6. Present address (in full) :
7. Date of birth by Christian era :
8. Age on the date of application :
9. Nationality :
10. Community (S/C., S/T) :
11. Educational qualifications :

* Examinations Passed	Name of Board/University	Yr. of Passing	Divs./Class	p.c. of marks	Remarks
H.S.L.C.					
H.S./P.U.					
B.A/B.Sc/B.Com.					
M.A/M.Sc/M.Com.					
Ph.D.					
Other Degree/Diploma					

*N.B. :-- Attested copies of marksheets and certificates should be enclosed.

12. Past experience, if any (Give details) :
13. Research publications (Give details in a separate sheet of paper) :
14. Present Occupation, if any :
15. Name of employer, if employed :
16. Basic pay drawn :
17. Higher Salary :
18. Name of two referees (Not related to the candidate) :

I beg to certify that the particulars furnished above are true in all respects. I shall be liable to action at any time if found otherwise.

Signature of the applicant :

**SHER-E-KASHMIR
UNIVERSITY OF AGRICULTURAL
SCIENCES & TECHNOLOGY**

Post Box No. 262, Srinagar-190001

Faculty Advertisement Notice No. 1 of 1986

Applications on prescribed forms are invited for the following posts:

I. Associate Professor/Senior Scientist and Equivalent (1200-1900) UGC Scale.

1. Agronomy (Field Crops/Water Management)
2. Pomicology
3. Olericulture
4. Floriculture
5. Agri. Entomology
6. Agri. Engineering (Water Management)
7. Plant Physiology (Field/Hort. Crops)
8. Soil Sciences
9. Animal Production & Management
10. Animal Breeding
11. Animal Nutrition
12. Veterinary Physiology
13. Veterinary Anatomy
14. Veterinary Parasitology
15. Veterinary Pathology
16. Poultry Sciences
17. Animal Products Technology
18. Deputy Director Research
(Veterinary & Animal Husbandry)

Applications not submitted in the prescribed form mentioned above in 7 (seven) copies will not be entertained.

Number of this advertisement and name of the post must be referred to in the application.

Persons in employment should apply through proper channel or with no objection certificate from the present employer.

Candidates will be required to appear at an interview if and when called for at their own cost.

Canvassing directly or indirectly will be a disqualification.

**M.C. Bhuyan
REGISTRAR I.C.**

Essential Qualifications

- (a) Doctorate Degree in the subject concerned.
- (b) Seven years experience of teaching and/or research in the subject out of which about four years should be in the rank of Assistant Professor or equivalent.

Desirable Experience

- (a) Research experience as evidenced by publications.

Note

1. Doctorate Degree relaxable to High Second Class Master's Degree in case of candidates with good record of productive research or brilliant academic record. However, such selected candidates shall have to complete Ph.D. within six years after the appointment or else the increments will be stopped.
2. In the discipline of Veterinary Sciences, Forestry and Agriculture Engineering, Doctorate Degree will not be essential but preferable.

In respect of posts at serial 2, 3, and 4 candidates holding PG Degree in Horticulture with specialization in Pomology/Olericulture/Floriculture will also be eligible.

II. Assistant Professor/Junior Scientist/Training Associate and Equivalent (700-1600) UGC Scale.

In the subjects mentioned from Sl. No. 1 to 18 for Associate Professor at I above and also in the following subjects :

- (a) Plant Pathology
- (b) Bio-Chemistry
- (c) Statistics
- (d) Forestry (Agro-forestry/Phytosociology)

Essential Qualification

- (a) High Second Class Master's Degree in the subject concerned.
- (b) Two years experience of Teaching/Research/Extension Education.

OR

Ph.D. in the subject concerned.

Note

In the discipline of Veterinary Sciences, Agriculture Engineering and Forestry experience is relaxable.

III. Deputy Librarian (1200-1900) UGC Scale

Essential Qualifications

- (a) High Second Class Master's Degree in Library Science.
- (b) Seven years experience in a Library of repute preferably in Agriculture University/Institution out of which about four years should be in the rank of Assistant Librarian of this University.

Desirable Qualifications

- (a) Doctorate Degree in Library Science.

(b) Knowledge of the state language and one foreign language viz. Russian, German, French.

(c) Master's Degree in Science Preferably biological science.

IV. The post at Serial No. 22 of item VII advertised vide Notice No. AU/Adm/A/153/84, dated : 3-3-1984, is hereby withdrawn

General Conditions

1. Allowance and Provident Fund	As per University rules.
2. Age	Not more than 55 years on 1-1-1986
3. Nature of appointment	Temporary with 2 years probation. However, candidates can be considered for appointment on deputation also on mutually agreeable terms.

General Instructions

1. Application forms can be had from the Deputy Registrar of the University free of cost. While making request for the application forms a self addressed envelop fully stamped 10" x 4" should accompany, specifying the name of the post for which application form is intended.
2. Application forms complete in all respects should reach the office of Deputy Registrar alongwith the application fee of Rs. 10/- (Rs. 2.50 in case of SC/ST candidates) in the form of crossed Indian Postal order drawn in favour of the Comptroller of this University by or before 15th April 1986.
3. The University reserves the right to withdraw or defer filling up of any of the post advertised here-in above.

Masaud Samoon
DEPUTY REGISTRAR

OSMANIA UNIVERSITY
HYDERABAD-500 007, (A.P.)

Advertisement No. 1/86

Dated : 23rd January 1986

Applications in the prescribed form together with the registration fee of Rs. 5/- payable through I.P.O./Demand Draft only drawn in favour of the Registrar, Osmania University are invited for the following

posts in the University Service, so as to reach the undersigned on or before 20th February, 1986 :

S. No.	Name of the post	Nos.
1.	Professor of Commerce (SBI Chair)	One
2.	Professor of Bio-Medical Engineering	One
3.	Professor of Computer Science & Engineering	One
4.	Professor of Public Administration (Iien vacancy)	One
5.	Reader in Bio-Medical Engineering	One
6.	Reader in Computer Science & Engineering	Three
7.	Reader in Bio-Chemistry (COSIST)	Two
8.	Reader in Chemistry	Six
9.	Reader in Physics	Two
10.	Reader in Zoology (VI Plan)	One
11.	Reader in Public Administration	One
12.	Reader in Political Science	One
13.	Reader in Hindi	One
14.	Reader in German (VI Plan)	One
15.	Lecturer in Physics	Two
16.	Lecturer in Chemistry (PG Centre, Bhiknur)	Three
17.	Lecturer in Chemistry (PG Centre, Mirzapur)	Three
18.	Lecturer in Mechanical Engineering (KSM, Kothagudem)	One
19.	Lecturer in Mining Engineering (KSM Kothagudem)	One
20.	Lecturer in Electrical Engineering (KSM Kothagudem)	One
21.	Lecturer in Electronics & Communication Engg.	One
22.	Lecturer in Computer Science & Engineering	Two
23.	Lecturer in Political Science	One
24.	Lecturer in Public Administration	Two

25. Maintenance Engineer (Univ. Computer Centre)	One
26. Programmer (University Computer Centre)	Two
27. Assistant Programmer (Univ. Computer Centre)	One
28. Computer Operator (Univ. Computer Centre)	Two
29. Cameraman (Audio-Visual Research Centre)	One
30. Asstt. Engineer (Audio-Visual Research Centre)	One
31. Technician (Audio-Visual Research Centre)	One

Note: Posts at S. Nos. 29, 30 and 31 are tenable upto 31.3.1990 only financed by the U.G.C., New Delhi.

Scale of Pay

Professors	... Rs. 1500-2500
Readers	... Rs. 1200-1900
Lecturers	... Rs. 700-1600
Maintenance Engineer	... Rs. 1050-1600
Programmer	... Rs. 750-1300

(likely to be revised)

Ass't. Programmer	... Rs. 750-1300
Computer Operator	... Rs. 600-1000
Cameraman	... Rs. 700-1200
Asstt. Engineer	... Rs. 700-1200
Technician	... Rs. 425- 650

Age

Professors	... Not above (50) years
Readers	... Not above (40) years
Lecturers	... Not above (35) years
Others	... Not above (30) years

Note : (i) Age limit does not apply to the employees of this University.
(ii) Relaxation in age to the extent of five years shall be granted to the candidates belonging to SC, ST & BC.
(iii) 14%, 4% and 25% reservations are made for SCs, STs and BCs respectively for the posts excluding Professors.

Application forms can be had from the Director, Dept. of Publications and University Press, Osmania University, Hyderabad-7 A.P., on payment of Rs. 4.50 in person (Rs. 2.25 for the posts at S. Nos. 26 to 31) or I.P.O./Demand Draft together with postal charges for Ordinary/ Registered Post made payable to the Director and by sending a self-addressed envelope of 14 1/4 x 26 1/4 cms.

Full particulars can be had from the Director on requisition at free of cost by sending a self addressed stamped envelope.

REGISTRAR

NEW PUBLICATIONS: JANUARY-FEBRUARY 1986

R.G.D. Allen : MATHEMATICAL ANALYSIS FOR ECONOMISTS

This standard textbook of mathematics for economists, prescribed in a large number of Indian universities for graduate and postgraduate courses, has now been reissued in an Indian reprint for the first time.

Demy 8VO/580 pp./Rs. 65.00

M.V. Joshi : PROCESS EQUIPMENT DESIGN

The second edition of this standard textbook for Chemical Engineering students includes two additional chapters on safety and hazards in the equipment industry and fundamentals of computer-aided design. Extensive appendices consisting of material specifications and relevant Indian standards make the book useful for practising engineers also.

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P.S. Sawhney : STRUCTURAL DETAILS OF STEEL STRUCTURES

P.S. Sawhney : STRUCTURAL DETAILS OF REINFORCED CONCRETE STRUCTURES

Both books have been prepared for Civil Engineering diploma courses by Professor Sawhney, Head, Civil Engineering Department, Central Polytechnic, Chandigarh. The books explain the working details of steel and concrete structures through simple, lucid drawings and tables of appendices.

Book 1 : Demy quarto/56 pp./Rs. 35.00

Book 2 : Demy quarto/52 pp./Rs. 30.00

K.L. Kapoor : PHYSICAL CHEMISTRY, Volumes 2 & 3

This popular series for Honours courses in Chemistry has now been revised in SI units.

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Volume 2 : Royal 8VO/460 pp./Rs. 80.00

Volume 3 : Royal 8VO/600 pp./Rs. 90.00

Charles Ruas : CONVERSATIONS WITH AMERICAN WRITERS

The book consists of a series of conversational interviews conducted by the American journalist Charles Ruas with leading American writers like Gore Vidal, Susan Sontag, Paul Theroux, Truman Capote, Tennessee Williams, Norman Mailer, William Burroughs, E.L. Doctorow, etc. These interviews are along the same lines as the *Paris Review Series*.

Demy 8VO/360 pp./Rs. 60.00

Kapoor : PUBLIC ADMINISTRATION—THEORY & PRACTICE

This textbook has been specially prepared for the Public Administration paper of honours courses in political science of major universities in India.

Demy 8VO/300 pp./Rs. 50.00

Singh : HUMAN ANATOMY, Volume 2

This textbook is designed for easy visualisation so that the illustrations and the text complement each other. The second volume presents the gross human anatomy of the cardiovascular system, the lymph nodes, the lymphatic drainage, and the peripheral nervous system. The diagrams are schematic and the text is specially designed for the beginner.

Royal 8VO/344 pp./Rs. 75

Pachauri : MAELSTROM

This is a bi-lingual edition of Jaya Shankar Prasad's *Aandhi* and other stories which appear in their English translation along with their parallel Hindi text for the first time.

Demy 8VO/212 pp./Rs. 60.00

MACMILLAN INDIA LIMITED

2/10 Ansari Road, Daryaganj, New Delhi-110 002

SUKHADIA UNIVERSITY

UDAIPUR

Advertisement No. 2/86 Dated: 25.1.1986

Applications are invited on prescribed application form for following posts in Teaching, Research and Extension on regular basis in the University, so as to reach the undersigned within 30 days from the issue of publication in the Daily Newspaper. Application form and full details about qualifications etc. can be obtained from the undersigned on payment of Rs. 5/- through Crossed Indian Postal Order in favour of the Comptroller, Sukhadia University, Udaipur. A self addressed envelope (27 cms. x 12 cms.) duly stamped worth Rs. 1.50 paise should invariably be sent alongwith the Postal Order.

1. PROFESSOR

(a) Plant Physiology	— 1
(b) Animal Breeding & Genetics	— 1
(c) Veterinary Parasitology	— 1
(d) Veterinary Pathology	— 1
(e) Associate Director Research (Veterinary & Animal Science)	— 1
(f) Soil & Water Conservation Engineering	— 1
(g) Farm Machinery & Power Engineering	— 1
(h) Political Science	— 1
(i) Commerce-Accounts & Statistics	— 1
(j) Hindi—(Meera Chair)	— 1

2. ASSOCIATE PROFESSOR

(a) Horticulture	— 2
(b) Extension Education	— 2
(c) Plant Pathology	— 1
(d) Agro Forestry	— 1
(e) Agronomy	— 1
(f) Bio-Chemistry	— 1
(g) Veterinary Physiology & Bio-Chemistry	— 1
(h) Livestock Production & Management	— 1
(i) Animal Production (Animal Nutrition)	— 1
(j) Veterinary Surgery & Radiology	— 1
(k) Veterinary Parasitology	— 1
(l) Home Management	— 1
(m) Soil & Water Conservation Engineering	— 3
(n) Farm Machinery & Power Engineering	— 3
(o) Electrical Engineering	— 1
(p) Mining Engineering	— 1
(q) Philosophy	— 1
(r) Geography	— 1
(s) Drawing & Painting	— 1
(t) Psychology	— 1
(u) Botany	— 1
(v) Chemistry	— 1

3. ASSISTANT PROFESSOR

(a) Agricultural Economics	— 4
(b) Agricultural Statistics	— 11
(c) Agronomy	— 1
(d) Bio-Chemistry	— 4
(e) Extension Education	— 1
(f) Plant Physiology	— 1
(g) Agro Meteorology	— 1
(h) Agrostology	— 1
(i) Limnology & Fisheries	— 1
(j) Livestock Production & Management	— 4
(k) Veterinary Physiology & Bio-Chemistry	— 1

(l) Animal Production (Animal Nutrition)	— 2
(m) Veterinary Anatomy	— 3
(n) Animal Breeding & Genetics	— 1
(o) Dairy Science	— 1
(p) Dairy Bacteriology	— 2
(q) Dairy Economics & Extension Education	— 1
(r) Home Science Extension Education	— 1
(s) Soil & Water Conservation Engineering	— 1
(t) Zoology	— 1
(u) Rural Sociology	— 1
(v) Philosophy	— 1
(w) Political Science	— 1
(x) Commerce—Business Administration	— 1
(y) Economics	— 1
(z) Hindi	— 1

PAY SCALE FOR THE POST

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500.
2. Associate Professor : Rs. 1200-50-1300-60-1900.
3. Assistant Professor : Rs. 700-40-1100-50-1600.

Benefits of D.A., House Rent allowance, Provident Fund and Leave etc. would be according to University Rules.

4. QUALIFICATIONS

Generally as prescribed by the University Grant Commission/University. Details of qualifications will be supplied alongwith application forms.

5. General Note

1. In case of, Professor-Plant Physiology, Animal Breeding and Genetics, Veterinary Parasitology, Political Science, Commerce-Accounts & Statistics, Associate Professor-Plant Pathology, Agro Forestry, Agronomy, Bio-Chemistry, Animal Production (Animal Nutrition), Veterinary Parasitology, Electrical Engineering, Mining Engineering, Philosophy, Geography, Drawing & Painting, Chemistry. Assistant Professor-Agricultural Economics, Agricultural Statistics, Plant Physiology, Veterinary Physiology & Bio-Chemistry, Veterinary Anatomy, Dairy Science, Philosophy, Political Science, the candidates who have already applied in response to our previous advertisements No. 3/84 dated 7.4.84, 6/84 dated 30.7.84, 8/84 dated 5.12.84 and 1/85 dated 30.5.85 need not apply again but they are requested to please send their fresh Bio-data (one side typed) on plain paper if they wish to be considered for the post.
2. Number of posts may be increased or decreased.
3. The qualifications may be relaxed in case response is poor.
4. Application received after the expiry of the last date may also be considered at the discretion of the Vice-Chancellor.
5. 16% posts would be reserved for Scheduled Caste and 12% for Scheduled Tribes, subject to general suitability.
6. A higher start in the grade may be considered for exceptionally qualified candidate.

7. The University reserves the right not to fill up any of the posts advertised.

G.S. Sharma
REGISTRAR

DEVI AHILYA VISHWAVIDYALAYA, INDORE

V.V. HOUSE, INDORE-452 001.

No. Estt./III(8)/86 Dated : 25-1-1986
ADVERTISEMENT

Applications in the prescribed forms are invited for Two posts of Lecturer (Rs. 700-1600) and one temporary post of Craft Teacher (Rs. 300-600 N.P.) in the University Teaching Department of Education so as to reach the undersigned on or before 28th February 1986.

2. Application forms together with details of qualifications, specialization etc. can be obtained from the University Office on payment of Rs. 5/- in person or by sending a Crossed Indian Postal Order of Rs. 10/- payable to the Registrar, Devi Ahilya Vishwavidyalaya, Indore.

I.S. Mehta
REGISTRAR

UNIVERSITY OF POONA

GANESHKHIND PUNE-411007

Advertisement No. 15/1986

REQUIRES

READER IN DEFENCE STUDIES

Scale : Rs. 1200-50-1300-60-1600-Assessment-60-1900 plus allowances.

Age Limit : 45 years.

General Qualifications

Good academic record with doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

Five years' experience of teaching/research provided that at least three of these years were as Lecturer or in an equivalent position. Condition relaxable for candidate of outstanding record of Teaching/Research.

Essential Qualifications

M. Tech. Computer Science, with extensive programming experience, particularly in Development of Graphical simulations of terrains. Ten years' experience in Defence services.

Application forms and more details of qualifications, experience, etc. available for Rs. 10/- in cash or by sending self addressed envelope (23 cms x 20 cms) stamped with Rs. 2.30 and Postal Order of Rs. 10/- to the Registrar. Apply on or before 22nd February, 1986.

S.P. Bhosale
REGISTRAR